**THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF TEXAS
MARSHALL DIVISION**

UNILOC 2017 LLC,	§	
	§	
Plaintiff,	§	
	§	Case No. 2:18-CV-496-JRG-RSP
v.	§	
	§	Case No. 2:18-CV-504-JRG-RSP
GOOGLE LLC,	§	
	§	
Defendant.	§	

**CLAIM CONSTRUCTION
MEMORANDUM AND ORDER**

On January 9, 2020, the Court held a hearing to determine the proper construction of

disputed claim terms in United States Patents No. 6,349,154 (Civil Action No. 2:18-CV-496) and

8,949,954 (Civil Action No. 2:18-CV-504). Having reviewed the arguments made by the parties

at the hearing and in their claim construction briefing (Dkt. Nos. 142, 150 & 152),[1] having

considered the intrinsic evidence, and having made subsidiary factual findings about the extrinsic

evidence, the Court hereby issues this Claim Construction Memorandum and Order. *See Phillips*

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[1] Pursuant to the Court's November 22, 2019 Order (Civil Action No. 2:18-CV-495, Dkt. No. 127; Civil Action No. 2:18-CV-496, Dkt. No. 133; Civil Action No. 2:18-CV-504, Dkt. No. 126), the parties submitted consolidated claim construction briefing for Civil Actions No. 2:18-CV-495, -496, and -504. As to Civil Action No. 2:18-CV-495, the parties submitted a Joint Stipulation with Proposed Stay, stating that "the parties believe staying this case pending resolution of . . . *inter partes* review will conserve party resources and promote judicial economy." No. 2:18-CV-495, Dkt. No. 139. Pursuant to this Joint Stipulation, the Court entered a stay in Civil Action No. 2:18-CV-495 (Dkt. No. 140). The present Claim Construction Memorandum and Order therefore does not address the '676 Patent terms briefed in Plaintiff's Opening Claim Construction Brief, and the Court herein cites docket numbers in only Civil Action No. 2:18-CV-496 unless otherwise indicated. Citations to documents (such as the parties' briefs and exhibits) in this Claim Construction Memorandum and Order refer to the page numbers of the original documents rather than the page numbers assigned by the Court's electronic docket unless otherwise indicated.

v. AWH Corp., 415 F.3d 1303, 1314 (Fed. Cir. 2005) (en banc); *Teva Pharm. USA, Inc. v. Sandoz, Inc.*, 135 S. Ct. 831, 841 (2015).

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I. BACKGROUND

Plaintiff Uniloc 2017 LLC ("Plaintiff" or "Uniloc") alleges that Defendant Google LLC ("Defendant" or "Google") infringes United States Patents No. 6,349,154 ("the '154 Patent") and 8,949,954 ("the '954 Patent").

Shortly before the start of the January 9, 2020 hearing, the Court provided the parties with preliminary constructions with the aim of focusing the parties' arguments and facilitating discussion. Those preliminary constructions are noted below within the discussion for each term.

II. LEGAL PRINCIPLES

"It is a 'bedrock principle' of patent law that 'the claims of a patent define the invention to which the patentee is entitled the right to exclude.'" *Phillips*, 415 F.3d at 1312 (quoting *Innova/Pure Water Inc. v. Safari Water Filtration Sys., Inc.*, 381 F.3d 1111, 1115 (Fed. Cir. 2004)). Claim construction is clearly an issue of law for the court to decide. *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 970–71 (Fed. Cir. 1995) (en banc), *aff'd*, 517 U.S. 370 (1996). "In some cases, however, the district court will need to look beyond the patent's intrinsic evidence and to consult extrinsic evidence in order to understand, for example, the background science or the meaning of a term in the relevant art during the relevant time period." *Teva*, 135 S. Ct. at 841 (citation omitted). "In cases where those subsidiary facts are in dispute, courts will need to make subsidiary factual findings about that extrinsic evidence. These are the 'evidentiary underpinnings' of claim construction that we discussed in *Markman*, and this subsidiary factfinding must be reviewed for clear error on appeal." *Id.* (citing 517 U.S. 370).

To determine the meaning of the claims, courts start by considering the intrinsic evidence. *See Phillips*, 415 F.3d at 1313; *see also C.R. Bard, Inc. v. U.S. Surgical Corp.*, 388 F.3d 858, 861 (Fed. Cir. 2004); *Bell Atl. Network Servs., Inc. v. Covad Commc'ns Group, Inc.*, 262 F.3d 1258,

1267 (Fed. Cir. 2001). The intrinsic evidence includes the claims themselves, the specification, and the prosecution history. *See Phillips*, 415 F.3d at 1314; *C.R. Bard*, 388 F.3d at 861. Courts give claim terms their ordinary and accustomed meaning as understood by one of ordinary skill in the art at the time of the invention in the context of the entire patent. *Phillips*, 415 F.3d at 1312–13; *accord Alloc, Inc. v. Int'l Trade Comm'n*, 342 F.3d 1361, 1368 (Fed. Cir. 2003).

The claims themselves provide substantial guidance in determining the meaning of particular claim terms. *Phillips*, 415 F.3d at 1314. First, a term's context in the asserted claim can be very instructive. *Id.* Other asserted or unasserted claims can aid in determining the claim's meaning because claim terms are typically used consistently throughout the patent. *Id.* Differences among the claim terms can also assist in understanding a term's meaning. *Id.* For example, when a dependent claim adds a limitation to an independent claim, it is presumed that the independent claim does not include the limitation. *Id.* at 1314–15.

"[C]laims 'must be read in view of the specification, of which they are a part.'" *Id.* at 1315 (quoting *Markman*, 52 F.3d at 979). "[T]he specification 'is always highly relevant to the claim construction analysis. Usually, it is dispositive; it is the single best guide to the meaning of a disputed term.'" *Phillips*, 415 F.3d at 1315 (quoting *Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1582 (Fed. Cir. 1996)); *accord Teleflex, Inc. v. Ficosa N. Am. Corp.*, 299 F.3d 1313, 1325 (Fed. Cir. 2002). This is true because a patentee may define his own terms, give a claim term a different meaning than the term would otherwise possess, or disclaim or disavow the claim scope. *Phillips*, 415 F.3d at 1316. In these situations, the inventor's lexicography governs. *Id.* The specification may also resolve the meaning of ambiguous claim terms "where the ordinary and accustomed meaning of the words used in the claims lack sufficient clarity to permit the scope of the claim to be ascertained from the words alone." *Teleflex*, 299 F.3d at 1325. But, "[a]lthough

the specification may aid the court in interpreting the meaning of disputed claim language, particular embodiments and examples appearing in the specification will not generally be read into the claims." *Comark Commc'ns, Inc. v. Harris Corp.*, 156 F.3d 1182, 1187 (Fed. Cir. 1998) (quoting *Constant v. Advanced Micro-Devices, Inc.*, 848 F.2d 1560, 1571 (Fed. Cir. 1988)); *accord Phillips*, 415 F.3d at 1323.

The prosecution history is another tool to supply the proper context for claim construction because a patent applicant may also define a term in prosecuting the patent. *Home Diagnostics, Inc. v. Lifescan, Inc.*, 381 F.3d 1352, 1356 (Fed. Cir. 2004) ("As in the case of the specification, a patent applicant may define a term in prosecuting a patent."). "[T]he prosecution history (or file wrapper) limits the interpretation of claims so as to exclude any interpretation that may have been disclaimed or disavowed during prosecution in order to obtain claim allowance." *Standard Oil Co. v. Am. Cyanamid Co.*, 774 F.2d 448, 452 (Fed. Cir. 1985).

Although extrinsic evidence can be useful, it is "less significant than the intrinsic record in determining the legally operative meaning of claim language." *Phillips*, 415 F.3d at 1317 (citations and internal quotation marks omitted). Technical dictionaries and treatises may help a court understand the underlying technology and the manner in which one skilled in the art might use claim terms, but technical dictionaries and treatises may provide definitions that are too broad or may not be indicative of how the term is used in the patent. *Id.* at 1318. Similarly, expert testimony may aid a court in understanding the underlying technology and determining the particular meaning of a term in the pertinent field, but an expert's conclusory, unsupported assertions as to a term's definition are entirely unhelpful to a court. *Id.* Generally, extrinsic evidence is "less reliable than the patent and its prosecution history in determining how to read claim terms." *Id.*

The Supreme Court of the United States has "read [35 U.S.C.] § 112, ¶ 2 to require that a patent's claims, viewed in light of the specification and prosecution history, inform those skilled in the art about the scope of the invention with reasonable certainty." *Nautilus, Inc. v. Biosig Instruments, Inc.*, 134 S. Ct. 2120, 2129 (2014). "A determination of claim indefiniteness is a legal conclusion that is drawn from the court's performance of its duty as the construer of patent claims." *Datamize, LLC v. Plumtree Software, Inc.*, 417 F.3d 1342, 1347 (Fed. Cir. 2005) (citations and internal quotation marks omitted), *abrogated on other grounds by Nautilus,* 134 S. Ct. 2120.

III. THE PARTIES' STIPULATED TERMS

As to the '154 Patent, the parties submitted in their Joint Claim Construction Statement Pursuant to P.R. 4-3, filed November 7, 2019 (Dkt. No. 123), that the parties had not agreed upon any constructions. Plaintiff submits in its opening brief (Dkt. No. 142 at 3) that the parties have reached agreement upon the following constructions:

Term	Agreed Construction
"decoding said encoded pictures" ('154 Patent, Claim 1)	Plain and ordinary meaning
"a decoder (4) for decoding said encoded pictures" ('154 Patent, Claims 5, 10)	Plain and ordinary meaning

As to the '954 Patent, the parties submitted in their November 7, 2019 Joint Claim Construction Statement Pursuant to P.R. 4-3 (Civil Action No. 2:18-CV-504, Dkt. No. 115 at 1), in their briefing (Dkt. No. 142 at 3), and in their December 26, 2019 Joint Claim Construction

Chart (No. 2:18-CV-504, Dkt. No. 147, App'x A at 1) that the parties agree upon the following

constructions:

Term	Agreed Construction
"requesting location" ('954 Patent, All Asserted Claims)	Plain and ordinary meaning (no construction necessary)
"identifying . . . the remote computing device fingerprint and by a requesting location" ('954 Patent, All Asserted Claims)	"identifying . . . the remote computing device by a device fingerprint and by a requesting location"

IV. CONSTRUCTION OF DISPUTED TERMS IN U.S. PATENT NO. 6,349,154

The '154 Patent, titled "Method and Arrangement for Creating a High-Resolution Still

Picture," issued on February 19, 2002, and bears an earliest priority date of December 22, 1997.

Plaintiff submits: "The '154 patent teaches that using motion-compensation predictive encoding

based on motion between successive pictures (instead of motion between each picture and a

reference picture) increases the probability that motion vectors with sub-pixel accuracy will be

obtained." Dkt. No. 142 at 2. The Abstract of the '154 Patent states:

> A method and arrangement is disclosed for creating a high-resolution still picture.
> A sequence of lower-resolution pictures is subjected to motion-compensated
> predictive encoding, preferably by an MPEG encoder producing an IPPP[]
> sequence of encoded pictures. The relatively small differences between successive
> pictures, which are due to motion of the image sensor or motion in the scene,
> become manifest in motion vectors with sub-pixel accuracy. The high-resolution
> picture is then created from the decoded pictures and the motion vectors generated
> by the encoder. The invention is particularly applicable in electronic still picture
> cameras with a storage medium. The MPEG encoder takes care of data
> compression, and the decoder also allows playback of the original moving video
> sequence.

A. "resolution"

Plaintiff's Proposed Construction	Defendant's Proposed Construction
Plain and ordinary meaning – Number of pixels per unit of measure[2]	"number of pixels"

Dkt. No. 123, Ex. A at 1; Dkt. No. 142 at 10; Dkt. No. 150 at 3; Dkt. No. 153, App'x A at 1. The parties submit that this term appears in all claims of the '154 Patent. *Id.*

Shortly before the start of the January 9, 2020 hearing, the Court provided the parties with the following preliminary construction: "number of pixels."

(1) The Parties' Positions

Plaintiff argues that Defendant's proposal should be rejected because "[t]here is no disclosure in the '154 patent that would lead to the understanding that 'resolution' could refer to the number of pixels irrespective of an associated dimension." Dkt. No. 142 at 10.

Defendant responds that Plaintiff's proposal should be rejected because "the claims are expressly directed to picture resolution, not display resolution," and "picture resolution does not change as the physical dimensions of the picture change." Dkt. No. 150 at 3. Defendant further submits: "Pixels per inch, for example, is commonly used to measure the screen resolution of a television display or computer monitor because those devices are sold in various sizes of varying display quality, but that has no bearing on the resolution of the video images that are broadcast to those devices." *Id.* at 4.

Plaintiff replies: "When more pixels are included in that same unit of measure, the display or picture has a higher resolution. The fewer pixels that are in that unit of measure means it has a

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[2] Plaintiff previously proposed only "Plain and ordinary meaning." Dkt. No. 123, Ex. A at 1.

lower resolution. Google's distinction between displays and pictures is nonsense." Dkt. No. 152 at 1.

At the January 9, 2020 hearing, Plaintiff urged that the construction of "resolution" should refer not just to the number of pixels but also to the *density* of pixels.

(2) Analysis

As a threshold matter, Defendant cites constructions of "resolution" in other cases involving unrelated patents. *See In re Certain Document Cameras and Software for Use Therewith*, USITC Inv. No. 337-TA-1045, Order No. 8 at 7 (Aug. 22, 2017) (adopting parties' agreement that "resolution" means "number of pixels in an image"); *Crystal Image Tech., Inc. v. Mitsubishi Elec. Corp.*, No. 08-307, 2010 WL 1979298, at *6 (W.D. Pa. Apr. 9, 2010) (construing "resolution" as "the fineness of an image, as measured by the number of image elements or pixels making up the image"). These constructions are of minimal weight, if any, in the present claim construction proceedings because "claims of unrelated patents must be construed separately." *e.Digital Corp. v. Futurewei Techs., Inc.*, 772 F.3d 723, 727 (Fed. Cir. 2014).

Claim 1 of the '154 Patent recites (emphasis added):

1. A method of creating a high-*resolution* still picture, comprising the steps of:
     receiving a sequence of lower-*resolution* pictures;
     estimating motion in said sequence of lower-*resolution* pictures with sub-pixel accuracy; and
     creating the high-*resolution* still picture from said sequence of lower-*resolution* pictures and said estimated motion;
     wherein the method comprises the steps of:
          subjecting the sequence of pictures to motion-compensated
               predictive encoding, thereby generating motion vectors
               representing motion between successive pictures of said
               sequence;
          decoding said encoded pictures; and
          creating the high-*resolution* picture from said decoded
               pictures and the motion vectors generated in said
               encoding step.

The specification discloses:

> The pictures C_1, C_2 and C_3 are the respective versions of pictures B_1, B_2 and B_3 on the high-resolution grid. They are obtained by up-sampling. In this example, in which the motion estimation is carried out at half-pixel accuracy, the high resolution is twice the low resolution in both the horizontal and the vertical direction. The up-sampling is carried out by repeating each pixel four times.

'154 Patent at 2:44–50; *see id.* at Figs. 1 & 4.

Plaintiff argues that "[b]y Google's construction, doubling the size of a display or image sensor and thereby doubling the number of pixels, without changing the number of pixels per unit of measure (or pixel density), would increase the resolution." Dkt. No. 142 at 10. This argument is unavailing. The claims refer to resolution of a *picture*, such as a "high-resolution still picture" or "lower-resolution pictures," such as recited in above-reproduced Claim 1 of the '154 Patent. In the context of a "picture," the term "resolution" refers to the number of pixels in the picture. The technical dictionary definition cited by Plaintiff, regarding resolution of a printer or a video display, is not inconsistent with this understanding. Dkt. No. 142, Ex. 7, *Microsoft Computer Dictionary* 408 (3d ed. 1997). Indeed, this definition refers to "the total number of pixels" in a video display rather than the number of pixels per unit of measurement (*id.*), and Plaintiff identifies nothing in the intrinsic record that refers to any "unit of measure" for a picture.

The Court therefore hereby construes **"resolution"** to mean **"number of pixels."**

B. "creating the high-resolution still picture from said sequence of lower-resolution pictures and said estimated motion"

Plaintiff's Proposed Construction	Defendant's Proposed Construction
Plain and ordinary meaning	"creating the still picture having a higher number of pixels from the sequence of two or more pictures that each has fewer pixels and said estimated motion"

Dkt. No. 123, Ex. A at 1; Dkt. No. 142 at 10; Dkt. No. 153, App'x A at 1. The parties submit that this term appears in Claims 1–4 of the '154 Patent. *Id.* at 1–2.

Shortly before the start of the January 9, 2020 hearing, the Court provided the parties with the following preliminary construction: "Plain meaning (apart from the Court's construction of 'resolution,' above)."

(1) The Parties' Positions

Plaintiff argues that Defendant's proposal "seeks to unnecessarily redefine 'high-resolution still picture' and 'lower-resolution pictures,'" "would incorrectly require that 'each' lower-resolution picture have 'estimated motion' associated with it," and would unnecessarily replace "sequence" with a "sequence of two or more." Dkt. No. 142 at 11.

Defendant responds that its proposed construction "flow[s] directly from the proper construction of 'resolution' and help[s] to clarify the meaning of these terms for a lay factfinder." Dkt. No. 150 at 5. For example, Defendant argues that its proposal "make[s] clear that the claims use 'high resolution' and 'lower-resolution' in relative, rather than absolute terms." *Id.*

Plaintiff replies that "Google's proposed constructions add confusion where none exists." Dkt. No. 152 at 1.

At the January 9, 2020 hearing, the parties presented no oral argument as to this term apart from their arguments as to the term "resolution," which is addressed above.

(2) Analysis

Defendant's proposed construction primarily merely incorporates Defendant's proposed construction for "resolution," which is unnecessary in light of the Court's construction of "resolution" as set forth above. Defendant's proposals of "higher" and "fewer" are likewise unnecessary because the disputed term, particularly the recital of "lower," already provides

sufficient context for understanding that "high resolution" is relative rather than absolute. The specification reinforces this understanding. *See, e.g.,* '154 Patent at 4:1–8.

Defendant also proposes that a "sequence" of pictures is "two or more" pictures, arguing that "this proposal accurately characterizes the meaning of 'sequence' in the context of these claims and makes the disputed terms more accessible and understandable to a lay factfinder. Dkt. No. 150 at 6. On balance, however, introducing the phrase "two or more" would tend to confuse rather than clarify the claims.

Finally, Defendant clarifies that its proposal "does not require each picture to have its own associated 'estimated motion.'" *Id.* In the absence of any dispute in this regard, no further construction is necessary.

The Court therefore hereby construes **"creating the high-resolution still picture from said sequence of lower-resolution pictures and said estimated motion"** to have its **plain meaning** (apart from the Court's construction of "resolution," above).

C. "creating the high-resolution still picture from said sequence of lower-resolution pictures and said motion vectors"

Plaintiff's Proposed Construction	Defendant's Proposed Construction
Plain and ordinary meaning	"creating the still picture having a higher number of pixels from the sequence of two or more pictures that each has fewer pixels and said motion vectors"

Dkt. No. 123, Ex. A at 1; Dkt. No. 142 at 11; Dkt. No. 153, App'x A at 2. The parties submit that this term appears in Claims 5–9 of the '154 Patent. *Id.*

Shortly before the start of the January 9, 2020 hearing, the Court provided the parties with the following preliminary construction: "Plain meaning (apart from the Court's construction of 'resolution,' above)."

(1) The Parties' Positions

Plaintiff submits that Defendant's proposal for this term should be rejected for the same reasons as Defendant's proposal for the term "creating the high-resolution still picture from said sequence of lower-resolution pictures and said estimated motion" (addressed above). Dkt. No. 142 at 11.

Defendant responds as to this term together with the term "creating the high-resolution still picture from said sequence of lower-resolution pictures and said estimated motion," addressed above. *See* Dkt. No. 150 at 5–6.

Plaintiff replies that "Google's proposed constructions add confusion where none exists." Dkt. No. 152 at 1.

At the January 9, 2020 hearing, the parties presented no oral argument as to this term apart from their arguments as to the term "resolution," which is addressed above.

<u>(2) Analysis</u>

For the same reasons discussed as to the term "creating the high-resolution still picture from said sequence of lower-resolution pictures and said estimated motion," above, the Court hereby construes **"creating the high-resolution still picture from said sequence of lower-resolution pictures and said motion vectors"** to have its **plain meaning** (apart from the Court's construction of "resolution," above).

D. "create the high-resolution picture from said decoded pictures and the motion vectors generated by the encoder (2)"

Plaintiff's Proposed Construction	Defendant's Proposed Construction
Plain and ordinary meaning	"create the picture having a higher number of pixels from the sequence of two or more pictures that each has fewer pixels and the motion vectors generated by the encoder (2)"

Dkt. No. 123, Ex. A at 1; Dkt. No. 142 at 11–12; Dkt. No. 153, App'x A at 2. The parties submit that this term appears in Claims 5–9 of the '154 Patent. *Id.*

Shortly before the start of the January 9, 2020 hearing, the Court provided the parties with the following preliminary construction: "Plain meaning (apart from the Court's construction of 'resolution,' above)."

(1) The Parties' Positions

Plaintiff submits that Defendant's proposal for this term should be rejected for the same reasons as Defendant's proposal for the term "creating the high-resolution still picture from said sequence of lower-resolution pictures and said estimated motion" (addressed above). Dkt. No. 142 at 12.

Defendant responds as to this term together with the term "creating the high-resolution still picture from said sequence of lower-resolution pictures and said estimated motion," addressed above. *See* Dkt. No. 150 at 5–6.

Plaintiff replies that "Google's proposed constructions add confusion where none exists." Dkt. No. 152 at 1.

At the January 9, 2020 hearing, the parties presented no oral argument as to this term apart from their arguments as to the term "resolution," which is addressed above.

(2) Analysis

For the same reasons discussed as to the term "creating the high-resolution still picture from said sequence of lower-resolution pictures and said estimated motion," above, the Court hereby construes **"create the high-resolution picture from said decoded pictures and the motion vectors generated by the encoder (2)"** to have its **plain meaning** (apart from the Court's construction of "resolution," above).

E. "creating the high-resolution picture from said decoded pictures and the received motion vectors"

Plaintiff's Proposed Construction	Defendant's Proposed Construction
Plain and ordinary meaning	"creating the picture having a higher number of pixels from the sequence of two or more pictures that each has fewer pixels, and the received motion vectors"

Dkt. No. 123, Ex. A at 2; Dkt. No. 142 at 12; Dkt. No. 153, App'x A at 3. The parties submit that this term appears in Claim 10 of the '154 Patent. *Id.*

Shortly before the start of the January 9, 2020 hearing, the Court provided the parties with the following preliminary construction: "Plain meaning (apart from the Court's construction of 'resolution,' above)."

(1) The Parties' Positions

Plaintiff submits that Defendant's proposal for this term should be rejected for the same reasons as Defendant's proposal for the term "creating the high-resolution still picture from said sequence of lower-resolution pictures and said estimated motion" (addressed above). Dkt. No. 142 at 12.

Defendant responds as to this term together with the term "creating the high-resolution still picture from said sequence of lower-resolution pictures and said estimated motion," addressed above. *See* Dkt. No. 150 at 5–6.

Plaintiff replies that "Google's proposed constructions add confusion where none exists." Dkt. No. 152 at 1.

At the January 9, 2020 hearing, the parties presented no oral argument as to this term apart from their arguments as to the term "resolution," which is addressed above.

(2) Analysis

For the same reasons discussed as to the term "creating the high-resolution still picture from said sequence of lower-resolution pictures and said estimated motion," above, the Court hereby construes **"creating the high-resolution picture from said decoded pictures and the received motion vectors"** to have its **plain meaning** (apart from the Court's construction of "resolution," above).

F. "high-resolution picture"

Plaintiff's Proposed Construction	Defendant's Proposed Construction
Plain and ordinary meaning	"picture having a higher number of pixels compared to the number of pixels in each of the sequence of lower-resolution pictures"

Dkt. No. 123, Ex. A at 2; Dkt. No. 142 at 12; Dkt. No. 153, App'x A at 3. The parties submit that this term appears in all claims of the '154 Patent. *Id.*

Shortly before the start of the January 9, 2020 hearing, the Court provided the parties with the following preliminary construction: "Plain meaning (apart from the Court's construction of 'resolution,' above)."

(1) The Parties' Positions

Plaintiff argues that "Google's proposed construction unnecessarily adds complexity to a term that has a well-understood meaning, especially in light of the specification and claims." Dkt. No. 142 at 13. Plaintiff also cites a technical dictionary that defines "high resolution" as: "The capability for reproducing text and graphics with relative clarity and fineness of detail." Dkt. No. 142, Ex. 7, *Microsoft Computer Dictionary* 234 (3d ed. 1997).

Defendant responds as to this term together with the term "creating the high-resolution still picture from said sequence of lower-resolution pictures and said estimated motion," addressed above. *See* Dkt. No. 150 at 5–6.

Plaintiff replies that "Google's proposed constructions add confusion where none exists." Dkt. No. 152 at 1.

At the January 9, 2020 hearing, the parties presented no oral argument as to this term apart from their arguments as to the term "resolution," which is addressed above.

(2) Analysis

For the same reasons discussed as to the term "creating the high-resolution still picture from said sequence of lower-resolution pictures and said estimated motion," above, the Court hereby construes **"high-resolution picture"** to have its **plain meaning** (apart from the Court's construction of "resolution," above).

G. "sequence of lower-resolution pictures"

Plaintiff's Proposed Construction	Defendant's Proposed Construction
Plain and ordinary meaning	sequence of two or more pictures, each of which contains fewer pixels than the ["high-resolution still picture" (claims 1, 5) / "high-resolution picture (claim 10)]

Dkt. No. 123, Ex. A at 2; Dkt. No. 142 at 13; Dkt. No. 153, App'x A at 3. The parties submit that this term appears in all claims of the '154 Patent. *Id.*

Shortly before the start of the January 9, 2020 hearing, the Court provided the parties with the following preliminary construction: "Plain meaning (apart from the Court's construction of 'resolution,' above)."

(1) The Parties' Positions

Plaintiff argues that "Google's proposed construction unnecessarily adds complexity to a term that has a well-understood meaning, especially in light of the specification and claims." Dkt. No. 142 at 13. Plaintiff also cites a technical dictionary that defines "low resolution" as: "[a]ppearing in relatively coarse detail . . . ." Dkt. No. 142, Ex. 7, *Microsoft Computer Dictionary* 291 (3d ed. 1997).

Defendant responds as to this term together with the term "creating the high-resolution still picture from said sequence of lower-resolution pictures and said estimated motion," addressed above. *See* Dkt. No. 150 at 5–6.

Plaintiff replies that "Google's proposed constructions add confusion where none exists." Dkt. No. 152 at 1.

At the January 9, 2020 hearing, the parties presented no oral argument as to this term apart from their arguments as to the term "resolution," which is addressed above.

(2) Analysis

For the same reasons discussed as to the term "creating the high-resolution still picture from said sequence of lower-resolution pictures and said estimated motion," above, the Court hereby construes **"sequence of lower-resolution pictures"** to have its **plain meaning** (apart from the Court's construction of "resolution," above).

H. "high-resolution still picture"

Plaintiff's Proposed Construction	Defendant's Proposed Construction
Plain and ordinary meaning	"still picture having a higher number of pixels compared to the number of pixels in each of the sequence of lower-resolution pictures"

Dkt. No. 123, Ex. A at 2; Dkt. No. 142 at 13; Dkt. No. 153, App'x A at 4. The parties submit that this term appears in all claims of the '154 Patent. *Id.* at 4.

Shortly before the start of the January 9, 2020 hearing, the Court provided the parties with the following preliminary construction: "Plain meaning (apart from the Court's construction of 'resolution,' above)."

(1) The Parties' Positions

Plaintiff argues that this term presents the same dispute as the term "high-resolution picture" (addressed above). Dkt. No. 142 at 13–14. Plaintiff also cites a technical dictionary that defines "high resolution" as: "The capability for reproducing text and graphics with relative clarity and fineness of detail." Dkt. No. 142, Ex. 7, *Microsoft Computer Dictionary* 234 (3d ed. 1997).

Defendant responds as to this term together with the term "creating the high-resolution still picture from said sequence of lower-resolution pictures and said estimated motion," addressed above. *See* Dkt. No. 150 at 5–6.

Plaintiff replies that "Google's proposed constructions add confusion where none exists." Dkt. No. 152 at 1.

At the January 9, 2020 hearing, the parties presented no oral argument as to this term apart from their arguments as to the term "resolution," which is addressed above.

(2) Analysis

For the same reasons discussed as to the term "creating the high-resolution still picture from said sequence of lower-resolution pictures and said estimated motion," above, the Court hereby construes **"high-resolution still picture"** to have its **plain meaning** (apart from the Court's construction of "resolution," above).

I. "estimating motion in said sequence of lower-resolution pictures with sub-pixel accuracy"

Plaintiff's Proposed Construction	Defendant's Proposed Construction
Plain and ordinary meaning	"using motion vectors based on a comparison of the motion between pairs of lower-resolution pictures where the motion vectors have an accuracy of less than a pixel based on the use of pixel fractions, e.g., ½, representing motion less than a full pixel"

Dkt. No. 123, Ex. A at 2; Dkt. No. 142 at 14; Dkt. No. 153, App'x A at 6; *see* Dkt. No. 150 at 15.

The parties submit that this term appears in Claims 1–9 of the '154 Patent. Dkt. No. 153, App'x A at 6.

Shortly before the start of the January 9, 2020 hearing, the Court provided the parties with the following preliminary construction: "estimating motion, in said sequence of lower-resolution pictures, with accuracy capable of representing motion that is less than a single pixel."

(1) The Parties' Positions

Plaintiff argues that "[t]he claim term simply indicates that the motion is estimated between lower-resolution pictures in a sequence of lower-resolution pictures with sub-pixel accuracy (*i.e.*, accuracy less than a single pixel)." Dkt. No. 142 at 14. Plaintiff also argues that whereas "Google's construction adds concepts of 'motion vectors' and the 'use of pixel fractions,' and a definition of pixel fraction (*i.e.*, 'representing motion less than a full pixel')," "[n]one of this is found in the claims." *Id.*

Defendant responds that "the specification repeatedly and consistently describes estimating motion in a sequence of lower-resolution pictures in the context of using motion vectors." Dkt. No. 150 at 15. Defendant also argues that "construing 'sub-pixel' to mean 'pixel fractions, *e.g.*, 1/2, representing motion less than a full pixel' provides greater clarity to a potentially confusing term." *Id.* Defendant cites the principle that "when a patent repeatedly and

consistently characterizes a claim term in a particular way, it is proper to construe the claim term

in accordance with that characterization." *See GPNE Corp. v. Apple Inc.*, 830 F.3d 1365, 1370

(Fed. Cir. 2016) (citations and internal quotation marks omitted).

Plaintiff replies that "the preferred embodiments includ[ing] use of motion vectors and

pixel fractions in carrying out the invention does not justify reading those limitations into the

claims." Dkt. No. 152 at 1.

At the January 9, 2020 hearing, the parties presented no oral argument as to this term.

(2) Analysis

Claim 1 of the '154 Patent recites (emphasis added):

1. A method of creating a high-resolution still picture, comprising the steps of:
    receiving a sequence of lower-resolution pictures;
    estimating motion in said sequence of lower-resolution pictures with sub-pixel accuracy; and
    creating the high-resolution still picture from said sequence of lower-resolution pictures and said estimated motion;
    wherein the method comprises the steps of:
        subjecting the sequence of pictures to motion-compensated predictive encoding, thereby *generating motion vectors representing motion between successive pictures of said sequence*;
        decoding said encoded pictures; and
        creating the high-resolution picture from said decoded pictures and the motion vectors generated in said encoding step.

The specification discloses:

> The creation of a high-resolution picture from a sequence of lower-resolution pictures relies on the availability of sub-pixel motion information. Employing motion-compensated predictive encoding based on *motion between successive pictures* (instead of motion between each picture and a fixed reference picture) increases the probability that motion vectors with sub-pixel accuracy will be obtained.

> * * *

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To simplify the example, it is assumed that all pixels of the object have the same amount of motion, so that a single *motion vector* is obtained for each subsequent picture.

* * *

The relatively small differences between successive pictures, which are due to motion of the image sensor or motion in the scene, become manifest in *motion vectors with sub-pixel accuracy*.

'154 Patent at 1:42–48, 2:30–43 & 4:65–5:1 (emphasis added).

Defendant's proposal of "using motion vectors" is consistent with these disclosures as well as with the above-reproduced claim language that recites "generating motion vectors representing motion between successive pictures of said sequence."

The separate recital of "generating motion vectors," however, weighs against including a "using motion vectors" limitation as part of the construction of the "estimating motion . . ." term. Further, Defendant's proposal of referring to "pixel fractions, e.g., ½," is unnecessary and would be potentially confusing by introducing the term "fractions."

The Court therefore hereby construes **"estimating motion in said sequence of lower-resolution pictures with sub-pixel accuracy"** to mean **"estimating motion, in said sequence of lower-resolution pictures, with accuracy capable of representing motion that is less than a single pixel."**

J. "receiving a sequence of lower-resolution pictures in the form of motion-compensated predictively encoded pictures and motion vectors representing motion between successive pictures of said sequence"

Plaintiff's Proposed Construction	Defendant's Proposed Construction
Plain and ordinary meaning	"receiving a sequence of lower-resolution pictures based on motion compensated predictively encoded pictures and motion vectors representing movement between the pixels of each individual picture and the next individual picture in the sequence"

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Dkt. No. 123, Ex. A at 3; Dkt. No. 142 at 14; Dkt. No. 153, App'x A at 8–9. The parties submit

that this term appears in Claim 10 of the '154 Patent. *Id.*

Shortly before the start of the January 9, 2020 hearing, the Court provided the parties with

the following preliminary construction: "No further construction necessary in light of construction

for 'means for receiving a sequence of lower-resolution pictures in the form of motion-

compensated predictively encoded pictures and motion vectors representing motion between

successive pictures of said sequence.'"

(1) The Parties' Positions

Plaintiff argues that "because this phrase is the function in a means plus function term . . .,

it is improper to modify this phrase." Dkt. No. 142 at 14.

Defendant presents argument as to the larger "means" term that includes this term. *See*

Dkt. No. 150 at 8–11.

At the January 9, 2020 hearing, the parties presented no oral argument as to this term.

(2) Analysis

The Court addresses this term as part of the larger disputed term "means for receiving a

sequence of lower-resolution pictures in the form of motion-compensated predictively encoded

pictures and motion vectors representing motion between successive pictures of said sequence,"

below.

K. "motion-compensated predictive encoding"

Plaintiff's Proposed Construction	Defendant's Proposed Construction
Plain and ordinary meaning	"converting a picture into a coded form by calculating the amount of motion between a current picture and a previously encoded picture, generating a prediction picture, which is subtracted from the current picture to be encoded to form a difference picture, and storing the addition of the prediction picture and the difference picture"

Dkt. No. 123, Ex. A at 3; Dkt. No. 142 at 15; Dkt. No. 153, App'x A at 11. The parties submit that this term appears in Claims 1–9 of the '154 Patent. *Id.*

Shortly before the start of the January 9, 2020 hearing, the Court provided the parties with the following preliminary construction: "predictive encoding based on motion between a current picture and a previously encoded picture."

(1) The Parties' Positions

Plaintiff argues that "Google seeks to convert the plain language of the claim into a means-plus-function term through claim construction." Dkt. No. 142 at 15.

Defendant responds that "Defendant's construction provides clarity to the proper claim scope, which is necessary because the term does not have a plain and ordinary meaning, contrary to Uniloc's contentions." *Id.* at 16. Defendant also argues: "Defendant's construction does not transform the limitation in Claims 1–9 into a means-plus-function term; Defendant's proposed construction merely clarifies that the operation described in the method of Claims 1–4 and the arrangement of Claims 5–9 recites definite structure (*e.g.*, encoder 2) that performs the claimed function." *Id.*

Plaintiff replies that "[t]here is no basis to limit th[is] claim term[] to the embodiment disclosed in the specification." Dkt. No. 152 at 2.

At the January 9, 2020 hearing, the parties presented no oral argument as to this term.

<u>(2) Analysis</u>

Claim 1 of the '154 Patent recites (emphasis added):

1. A method of creating a high-resolution still picture, comprising the steps of:
    receiving a sequence of lower-resolution pictures;
    estimating motion in said sequence of lower-resolution pictures with sub-pixel accuracy; and
    creating the high-resolution still picture from said sequence of lower-resolution pictures and said estimated motion;
    wherein the method comprises the steps of:
        subjecting the sequence of pictures to *motion-compensated predictive encoding*, thereby generating motion vectors representing motion between successive pictures of said sequence;
        decoding said encoded pictures; and
        creating the high-resolution picture from said decoded pictures and the motion vectors generated in said encoding step.

The specification demonstrates that "predictive encoding" is generally known in the art,

and the specification discusses motion compensation:

> The motion-compensated prediction encoder 2 (preferably a standard MPEG encoder such as the Philips integrated circuit SAA7650) encodes and compresses the pictures in accordance with the MPEG2 coding standard. * * *

> The first picture B_1 of the sequence is autonomously encoded. * * *

> The further pictures B_2 and B_3 are *predictively encoded*. In MPEG coding, they are usually referred to as P-pictures. *To encode these pictures*, the motion estimator 24 calculates the amount of motion between the current picture B_i and the stored previously encoded picture B_{i-1}. Usually, said motion estimation is carried out on the basis of blocks of 16*16 pixels. Using the calculated motion vector, the *motion compensator 25* generates a prediction picture C_i which is subtracted from the picture B_i to be encoded so as to form a difference output picture D_i. The prediction image C_i and the encoded difference D_i are added by adder 22 and stored in the frame memory 23.

'154 Patent at 3:9–39 (emphasis added).

Defendant urges that its proposed construction "tracks precisely with the specification's description of the operation of the motion compensated prediction encoder" (Dkt. No. 150 at 16), but "[a]lthough the specification may aid the court in interpreting the meaning of disputed claim language, particular embodiments and examples appearing in the specification will not generally be read into the claims." *Comark*, 156 F.3d at 1187 (quoting *Constant*, 848 F.2d at 1571); *accord Phillips*, 415 F.3d at 1323.

Nonetheless, "some construction of the disputed claim language will assist the jury to understand the claims." *TQP Dev., LLC v. Merrill Lynch & Co., Inc.*, No. 2:08-CV-471, 2012 WL 1940849, at *2 (E.D. Tex. May 29, 2012) (Bryson, J., sitting by designation).

The Court therefore hereby construes **"motion-compensated predictive encoding"** to mean **"predictive encoding based on motion between a current picture and a previously encoded picture."**

L. "motion-compensated predictively encoded"

Plaintiff's Proposed Construction	Defendant's Proposed Construction
Plain and ordinary meaning	"a picture converted into a coded form by calculating the amount of motion between a current picture and a previously encoded picture, generating a prediction picture, which is subtracted from the current picture to be encoded to form a difference picture, and storing the addition of the prediction picture and the difference picture"

Dkt. No. 123, Ex. A at 3; Dkt. No. 142 at 16; Dkt. No. 153, App'x A at 13. The parties submit that this term appears in Claim 10 of the '154 Patent. *Id.*

Shortly before the start of the January 9, 2020 hearing, the Court provided the parties with the following preliminary construction: "predictively encoded based on motion between a current picture and a previously encoded picture."

(1) The Parties' Positions

Plaintiff incorporates its arguments as to the term "motion-compensated predictive encoding" (addressed above). Dkt. No. 142 at 16.

Defendant likewise responds as to both of these terms together. *See* Dkt. No. 150 at 16.

Plaintiff replies that "[t]here is no basis to limit th[is] claim term[] to the embodiment disclosed in the specification." Dkt. No. 152 at 2.

At the January 9, 2020 hearing, the parties presented no oral argument as to this term.

(2) Analysis

For the same reasons discussed as to the term "motion-compensated predictive encoding," above, the Court hereby construes **"motion-compensated predictively encoded"** to mean **"predictively encoded based on motion between a current picture and a previously encoded picture."**

M. "generating motion vectors representing motion between successive pictures of said sequence"

Plaintiff's Proposed Construction	Defendant's Proposed Construction
"motion vector(s)" is "horizontal and vertical components representing the amount of motion between pictures or between blocks of pixels"	"generating motion vectors representing motion between the pixels of each individual picture and the next individual picture in the sequence"

Dkt. No. 123, Ex. A at 4; Dkt. No. 142 at 16; Dkt. No. 152 at 3; Dkt. No. 153, App'x A at 14–15.

The parties submit that this term appears in Claims 1–9 of the '154 Patent. *Id.* at 14.

Shortly before the start of the January 9, 2020 hearing, the Court provided the parties with the following preliminary construction: "generating motion vectors representing motion of pixels from positions in one picture to positions in the next picture in the sequence."

(1) The Parties' Positions

Plaintiff argues that Defendant's proposed construction should be rejected because "[t]he motion vectors described in the specification are for the picture as a whole – not for individual pixels." Dkt. No. 142 at 16.

Defendant cites its arguments as to the term "motion vectors," arguing that "'motion vectors' must be construed in accord with the specification, which acknowledges the reality that motion vectors should be calculated based on individual blocks of pixels, rather than pictures as a whole." Dkt. No. 150 at 16.

> Plaintiff replies:
>
> [T]he construction of "motion vector(s)" should be broad enough to encompass both pictures and blocks of pixels. The problem with Google's construction is that it is limited to groups of pixels, thereby excluding motion vectors that correspond to the entire picture. Uniloc's proposed construction can be modified to account for both. The proper construction of "motion vector(s)" is "horizontal and vertical components representing the amount of motion between pictures or between blocks of pixels."

Dkt. No. 152 at 3.

At the January 9, 2020 hearing, the parties presented no oral argument as to this term.

(2) Analysis

The Object and Summary of the Invention section of the specification refers to motion between successive pictures:

> It is an object of the invention to provide a method of creating still pictures with advantageous effects in terms of performance and practical implementations.
>
> To this end, the method in accordance with the invention comprises the steps of subjecting the sequence of pictures to motion-compensated predictive encoding, thereby generating *motion vectors representing motion between successive pictures of said sequence*; decoding said encoded pictures; and creating the high-resolution picture from said decoded pictures and the motion vectors generated in said encoding step.

'154 Patent at 1:30–40 (emphasis added).

The specification further discloses, however, that using a single motion vector is discussed in the specification "[t]o *simplify* the example." *See id.* at 2:33–38 ("To simplify the example, it is *assumed* that all pixels of the object have the same amount of motion, so that a *single motion vector* is obtained for each subsequent picture.") (emphasis added); *see id.* at 2:41–42 ("motion vector m_{13} indicates the amount of motion between pictures B_1 and B_3").

Moreover, the specification discloses an example of estimating motion using "blocks" of pixels within a picture (rather than the entire picture):

> To encode these pictures, the motion estimator 24 calculates the amount of motion between the current picture B_i and the stored previously encoded picture B_{i-1}. Usually, said motion estimation is carried out on the basis of blocks of 16*16 pixels.

Id. at 3:30–34.

The Court therefore hereby construes **"generating motion vectors representing motion between successive pictures of said sequence"** to mean **"generating motion vectors representing motion of pixels from positions in one picture to positions in the next picture in the sequence."**

N. **"sequence of I and P-pictures"**

Plaintiff's Proposed Construction	Defendant's Proposed Construction
Plain and ordinary meaning	"sequence of I and P-pictures as defined by an MPEG standard, such as MPEG-1 or MPEG-2, which uses the previous I or P picture for motion compensation and may be used as a reference for further prediction"

Dkt. No. 123, Ex. A at 4; Dkt. No. 142 at 16; Dkt. No. 153, App'x A at 18. The parties submit that this term appears in Claims 3 and 8 of the '154 Patent. *Id.*

Shortly before the start of the January 9, 2020 hearing, the Court provided the parties with the following preliminary construction: "sequence of I and P-pictures as defined by MPEG standards at the time of the invention."

(1) The Parties' Positions

Plaintiff argues that "[w]hile the specification acknowledges that autonomously encoded pictures are referred to as an I-picture in MPEG coding, and that predictively encoded pictures are referred to as P-pictures in MPEG coding, the specification does not limit the use of I and P-pictures to MPEG." Dkt. No. 142 at 17 (citing '154 Patent at 3:22–24 & 3:28–29).

Defendants respond that "[c]ontrary to Uniloc's argument that the construction should not be limited to MPEG, only MPEG coding is described in the specification." Dkt. No. 150 at 16 (citation omitted).

Plaintiff replies, in full: "Contrary to Google's argument, the specification does not limit the use of I and P-pictures to MPEG. Ex. 2 [('154 Patent)], 3:22–24, 3:28–29. I and P-pictures are applicable to standards other than MPEG, including at least H.264. Google offers no valid reason to limit the claims to the MPEG compression standards." Dkt. No. 152 at 2.

At the January 9, 2020 hearing, the parties presented no oral argument as to this term.

(2) Analysis

The specification discloses:

The motion-compensated prediction encoder 2 (*preferably a standard MPEG encoder* such as the Philips integrated circuit SAA7650) encodes and compresses the pictures in accordance with the MPEG2 coding standard.

* * *

The first picture B_1 of the sequence is autonomously encoded. In MPEG coding, such a picture is usually referred to as an I-picture. In FIG. 3, picture D_1 shows the pixel values of the autonomously encoded picture. The picture is applied to the encoder's output and also stored in the frame memory 23.

The further pictures B_2 and B_3 are predictively encoded. In MPEG coding, they are usually referred to as P-pictures. To encode these pictures, the motion estimator 24 calculates the amount of motion between the current picture B_i and the stored previously encoded picture B_{i-1}. Usually, said motion estimation is carried out on the basis of blocks of 16*16 pixels. Using the calculated motion vector, the motion compensator 25 generates a prediction picture C_i which is subtracted from the picture B_i to be encoded so as to form a difference output picture D_i. The prediction image C_i and the encoded difference D_i are added by adder 22 and stored in the frame memory 23.

'154 Patent at 3:9–12 & 3:22–39 (emphasis added).

The Federal Circuit "ha[s] expressly rejected the contention that if a patent describes only a single embodiment, the claims of the patent must be construed as being limited to that embodiment." *Phillips*, 415 F.3d at 1323. Also, "for a patentee to act as his own lexicographer and give a term something other than its well-established meaning, he must 'clearly set forth a definition of the disputed term.'" *Azure Networks, LLC v. CSR PLC*, 771 F.3d 1336, 1347 (Fed. Cir. 2014) (quoting *CCS Fitness, Inc. v. Brunswick Corp.*, 288 F.3d 1359, 1366 (Fed. Cir. 2002)), *vacated on other grounds by CSR PLC v. Azure Networks, LLC*, No. 14-976, 135 S. Ct. 1846 (Mem) (2015).

Here, however, the specification itself explains that the terms I-picture and P-picture are used in the art "[i]n MPEG coding." '154 Patent at 3:23–24 & 3:29. Defendant also cites extrinsic evidence that is consistent with this understanding. *See* Dkt. No. 150, Ex. 1 at p. 4 of 7.

On balance, Plaintiff fails to show that "I and P-pictures" have any meanings apart from the well-established meanings in MPEG standards. Defendant's proposal of "such as MPEG-1 or MPEG-2," however, is rejected. Any potential benefit that might accrue from providing these examples to the finder of fact is offset by the potential for the finder of fact to interpret these examples as being limiting. Finally, Defendant fails to support its proposal of stating that an MPEG standard "uses the previous I or P picture for motion compensation and may be used as a

reference for further prediction." Instead, the relevant meanings of I-picture and P-picture are simply the meanings that these terms had in MPEG standards at the time of the invention. *See PC Connector Solutions LLC v. SmartDisk Corp.*, 406 F.3d 1359, 1363 (Fed. Cir. 2005) ("A claim cannot have different meanings at different times; its meaning must be interpreted as of its effective filing date."); *see Kopykake Enters., Inc. v. Lucks Co.*, 264 F.3d 1377, 1383 (Fed. Cir. 2001) ("the literal scope of the term is limited to what it was understood to mean at the time of filing"); *Phillips*, 415 F.3d at 1313 ("the ordinary and customary meaning of a claim term is the meaning that the term would have to a person of ordinary skill in the art in question at the time of the invention, i.e., as of the effective filing date of the patent application").

The Court therefore hereby construes **"sequence of I and P-pictures"** to mean **"sequence of I and P-pictures as defined by MPEG standards at the time of the invention."**

O. "recursively adding, in the high-resolution domain, a current decoded picture to a previously created picture, said previously created picture being subjected to motion-compensation in accordance with the motion vector which is associated with the current decoded picture"

Plaintiff's Proposed Construction	Defendant's Proposed Construction
Plain and ordinary meaning	"in the high-resolution domain, iteratively adding the pixel values of a current decoded picture to a previously created picture, where the pictures in the high-resolution domain have a higher number of pixels compared to the number of pixels in each of the individual pictures in the low-resolution domain"

Dkt. No. 123, Ex. A at 5; Dkt. No. 142 at 17; Dkt. No. 150 at 13; Dkt. No. 153, App'x A at 19–20. The parties submit that this term appears in Claim 4 of the '154 Patent. *Id.*

Shortly before the start of the January 9, 2020 hearing, the Court provided the parties with the following preliminary construction: "recursively adding, in the high-resolution domain, the pixel values of a current decoded picture to the pixel values of a previously created picture, said

previously created picture being subjected to motion-compensation in accordance with the motion vector which is associated with the current decoded picture."

(1) The Parties' Positions

Plaintiff argues that "Google's proposed construction improperly imports limitations into the claims," and "[t]he claim requires the pictures to be added – not the 'pixel values' of the pictures." Dkt. No. 142 at 17.

Defendant submits that it "construes 'recursively' to mean 'iteratively' because it is a more accessible term which is used by the specification." Dkt. No. 150 at 13–14. Defendant argues that "Google's construction correctly conveys that the pixel values of a current decoded picture are added to a previously created picture in a high-resolution domain, in which the pictures have more pixels as compared to the current decoded picture which is in the low-resolution domain." *Id.* at 14.

At the January 9, 2020 hearing, the parties presented no oral argument as to this term.

(2) Analysis

Claim 4 of the '154 Patent recites (emphasis added):

4. The method as claimed in claim 1, wherein the creating step includes recursively adding, in the high-resolution domain, a current decoded picture to a previously created picture, said previously created picture being subjected to motion-compensation in accordance with the motion vector which is associated with the current decoded picture.

As a threshold matter, the parties present no dispute as to the phrase "said previously created picture being subjected to motion-compensation in accordance with the motion vector which is associated with the current decoded picture." *See* Dkt. No. 150 at 14 n.11. The Court therefore concludes that no construction is necessary as to that portion of this disputed term. Also,

Defendant fails to demonstrate that its proposal of "iteratively" is any clearer, "more accessible" (Dkt. No. 150 at 14), or more accurate that the word "recursively." *See* '154 Patent at 4:1–32.

As to Defendant's proposal of referring to adding "pixel values," Defendant cites Figure 4 and the following disclosure:

> FIG. 4 shows various pictures to illustrate the operation of the processing circuit. The pictures B_1, B_2 and B_3 are the decoded low-resolution pictures supplied by the prediction decoder 4. Apart from artefacts due with the imperfectness of the compression by the encoder, they correspond with the pictures B_1, B_2 and B_3 shown in FIGS. 1 and 3. Pictures E_1, E_2 and E_3 are their versions in the high-resolution domain. They are supplied by up-sampler 51 by pixel repetition.
>
> In a first iteration step, the processing circuit 5 outputs the first high-resolution picture G_1 and feeds it into the frame memory 54. Because the first picture is an I-picture, the output picture G_1 is the same as input picture E_1.
>
> In a second iteration step, the next high-resolution picture E_2 and a motion-compensated previous picture F_2 are *added* by adder 53. The motion-compensated picture F_2 is obtained by shifting the stored picture G_1 two pixels to the right and one pixel upwards in accordance with motion vector $m'_{12} =(2,1)$ which is twice the original motion vector m_{12}. Picture G_2 is the result of this iteration step. The *pixel values* shown have been normalized, i.e. divided by 2 which is the number of pictures processed thus far. As can be seen, high-resolution details start to appear in the vertical direction. Details do not yet appear in the horizontal direction because the original motion vector m_{12} has a sub-pixel component in the vertical direction only. The output picture G_2 (without the normalization factor being applied) is stored in frame memory 54.

'154 Patent at 4:1–27 (emphasis added). This disclosure demonstrates that "add[ing]" relates to the "pixel values" of pictures. *See id.*

The Court therefore hereby construes **"recursively adding, in the high-resolution domain, a current decoded picture to a previously created picture, said previously created picture being subjected to motion-compensation in accordance with the motion vector which is associated with the current decoded picture"** to mean **"recursively adding, in the high-resolution domain, the pixel values of a current decoded picture to the pixel values of a previously created picture, said previously created picture being subjected to motion-**

compensation in accordance with the motion vector which is associated with the current decoded picture."

P. "recursively adding, in the high-resolution domain, a current decoded picture to a previously created picture, said previously created picture being subjected to motion compensation (55) in accordance with the motion vector which is associated with the current decoded picture"

Plaintiff's Proposed Construction	Defendant's Proposed Construction
Plain and ordinary meaning	"in the high-resolution domain, iteratively adding the pixel values of a current decoded picture to a previously created picture, where the pictures in the high-resolution domain have a higher number of pixels compared to the number of pixels in each of the individual pictures in the low-resolution domain"

Dkt. No. 123, Ex. A at 5; Dkt. No. 142 at 16–17; Dkt. No. 153, App'x A at 20. The parties submit that this term appears in Claims 9 and 10 of the '154 Patent. *Id.* at 20–21.

Shortly before the start of the January 9, 2020 hearing, the Court provided the parties with the following preliminary construction: "No further construction necessary in light of construction for 'means (53,54) for recursively adding, in the high-resolution domain, a current decoded picture to a previously created picture.'"

<u>(1) The Parties' Positions</u>

Plaintiff submits that "[t]his claim phrase is substantively identical to the previous claim phrase," namely "recursively adding, in the high-resolution domain, a current decoded picture to a previously created picture, said previously created picture being subjected to motion-compensation in accordance with the motion vector which is associated with the current decoded picture" (addressed above). Dkt. No. 142 at 17.

Defendants argue this term together with the term "recursively adding, in the high-resolution domain, a current decoded picture to a previously created picture, said previously

created picture being subjected to motion-compensation in accordance with the motion vector which is associated with the current decoded picture" (Claim 4), addressed above, and the term "means (53,54) for recursively adding, in the high-resolution domain, a current decoded picture to a previously created picture" (Claims 9, 10), address below. *See* Dkt. No. 150 at 13–15.

(2) Analysis

The parties present no dispute as to the phrase "said previously created picture being subjected to motion compensation (55) in accordance with the motion vector which is associated with the current decoded picture."

The Court therefore addresses the present term as part of the term "means (53,54) for recursively adding, in the high-resolution domain, a current decoded picture to a previously created picture," below.

Q. "motion vector(s)"

Plaintiff's Proposed Construction	Defendant's Proposed Construction
"horizontal and vertical components representing the amount of motion between pictures or between blocks of pixels"[3]	"vector(s) representing two-dimensional motion of a block of pixels between two pictures"

Dkt. No. 123, Ex. A at 6; Dkt. No. 142 at 17; Dkt. No. 150 at 6; Dkt. No. 153, App'x A at 14–15. The parties submit that this term appears in all claims of the '154 Patent. *Id.* at 14.

Shortly before the start of the January 9, 2020 hearing, the Court provided the parties with the following preliminary construction: "vector(s) representing motion of a block of pixels between two pictures."

---

[3] Plaintiff previously proposed: "horizontal and vertical components representing the amount of motion between pictures." Dkt. No. 123, Ex. A at 6.

Plaintiff argues that Defendant's proposal should be rejected because "[t]here is no reason in the patent or the prosecution history to limit the term to motion vectors that correspond to 'a block of pixels.'" Dkt. No. 142 at 17.

Defendant responds that "Uniloc's proposed construction simplifies this term contrary to its description in the specification, and excludes embodiments where motion vectors are calculated between blocks of pixels within pictures." Dkt. No. 150 at 7.

At the January 9, 2020 hearing, the parties presented no oral argument as to this term.

(2) Analysis

Defendant fails to support introducing a limitation of "two-dimensional" motion. Also of note, both sides propose referring to a "block of pixels" or "blocks of pixels." For these reasons, and for the reasons discussed as to the term "generating motion vectors representing motion between successive pictures of said sequence," above, the Court hereby construes **"motion vector(s)"** to mean **"vector(s) representing motion of a block of pixels between two pictures."**

R. "means (1) for receiving a sequence of lower-resolution pictures"

Plaintiff's Proposed Construction	Defendant's Proposed Construction

Function:
    "receiving a sequence of lower-resolution pictures"
 	
Structure:
    "an image sensor, and equivalents thereof"
	Function:
	    "receiving a sequence of lower resolution pictures"
	
	Structure:
	    "the image sensor 1, and motion compensated prediction encoder 2 comprising a subtractor 21, an adder 22, a frame memory 23, a motion estimator 24, and a motion compensator 25, that performs the algorithm described at col. 3, ll. 28–39 and Figure 2, and equivalents thereof"

Dkt. No. 123, Ex. A at 6; Dkt. No. 142 at 18–19; *see* Dkt. No. 150 at 8; Dkt. No. 153, App'x A at 22–23. The parties submit that this term appears in Claim 5 of the '154 Patent. *Id.* at 22.

Shortly before the start of the January 9, 2020 hearing, the Court provided the parties with the following preliminary construction: "35 U.S.C. § 112, ¶ 6 applies. / Function (agreed): 'receiving a sequence of lower-resolution pictures' / Structure: 'an image sensor 1, and equivalents thereof.'"

(1) The Parties' Positions

Plaintiff argues that "Google's identification of a structure corresponding to the claimed function is overbroad, and is not supported by the specification." Dkt. No. 142 at 19.

Defendant responds that "[b]ecause the image sensor 'generates' rather than 'receives' these 'lower-resolution pictures,' Uniloc's proposed structure is incomplete." Dkt. No. 150 at 8.

Plaintiff replies: "The '154 patent specification discloses that the 'image sensor receives images A_i corresponding to the pictures A_1, A_2 and A_3 shown in FIG. 1.' Ex. 2 [('154 Patent)], 3:4-6. Figure 1 shows that pictures A_1, A_2 and A_3 are low resolution pictures. Thus, the correct structure for this term is an 'image sensor,' and equivalents thereof." Dkt. No. 152 at 3.

(2) Analysis

Title 35 U.S.C. § 112, ¶ 6 provides: "An element in a claim for a combination may be expressed as a means or step for performing a specified function without the recital of structure, material, or acts in support thereof, and such claim shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof." "The literal scope of a properly construed means-plus-function limitation does not extend to all means for performing a certain function. Rather, the scope of such claim language is sharply limited to the structure disclosed in the specification and its equivalents." *J & M Corp. v. Harley-Davidson,*

Inc., 269 F.3d 1360, 1367 (Fed. Cir. 2001). Further, "structure disclosed in the specification is

'corresponding' structure only if the specification or prosecution history clearly links or associates

that structure to the function recited in the claim." *Med. Instrumentation & Diagnostics Corp. v.*

Elekta AB, 344 F.3d 1205, 1219 (Fed. Cir. 2003) (citation and internal quotation marks omitted).

The parties agree that the claimed function is "receiving a sequence of lower resolution

pictures." The parties dispute what corresponding structure is necessary to perform this claimed

function.

The specification discloses:

The system comprises an *image sensor 1*, a motion-compensated prediction
encoder 2, a storage medium (or transmission channel) 3, a motion-compensated
prediction decoder 4 and a processing circuit 5 for creating the high-resolution
picture. The *image sensor receives images* A_i corresponding to the pictures A_1, A_2
and A_3 shown in FIG. 1, and *generates digitized low-resolution pictures* B_i
corresponding to the pictures B_1, B_2 and B_3 shown in FIG. 1.

The motion-compensated prediction encoder 2 (preferably a standard MPEG
encoder such as the Philips integrated circuit SAA7650) encodes and compresses
the pictures in accordance with the MPEG2 coding standard.   The encoder
comprises a subtracter 21, an adder 22, a frame memory 23, a motion estimator 24
and a motion compensator 25. Elements which are not essential for understanding
the invention, such as a discrete cosine transformer, a quantizer and a variable-
length encoder have been omitted. The operation of the encoder will briefly be
explained with reference to FIG. 3. In this Figure, the input images A_1, A_2 and A_3
and their digital counterparts B_1, B_2 and B_3 are the same as in FIG. 1.

The first picture B_1 of the sequence is autonomously encoded. In MPEG coding,
such a picture is usually referred to as an I-picture. In FIG. 3, picture D_1 shows the
pixel values of the autonomously encoded picture. The picture is applied to the
encoder's output and also stored in the frame memory 23.

The further pictures B_2 and B_3 are predictively encoded. In MPEG coding, they are
usually referred to as P-pictures. To encode these pictures, the motion estimator 24
calculates the amount of motion between the current picture B_i and the stored
previously encoded picture B_{i-1}.

'154 Patent at 2:67–3:32 (emphasis added).

At the January 9, 2020 hearing, Defendant argued that whereas the specification refers to the image sensor generating low-resolution pictures, the structure that receives those low-resolution pictures is the encoder 2. A fair reading of the above-reproduced disclosures is that the low-resolution pictures are received by the image sensor. *Id.* at 3:4–8. The disclosure regarding the encoder 2 is associated with a function of encoding rather than receiving. Also of note, the numeral "(1)" that appears in the disputed term aligns with the reference numeral associated with the image sensor in the specification, "image sensor 1." *See, e.g., id.* at 2:67–3:8.

The Court therefore hereby finds that **"means (1) for receiving a sequence of lower-resolution pictures"** is a means-plus-function term, the claimed function is **"receiving a sequence of lower-resolution pictures,"** and the corresponding structure is **"image sensor 1, and equivalents thereof."**

S. "means for receiving a sequence of lower-resolution pictures in the form of motion-compensated predictively encoded pictures and motion vectors representing motion between successive pictures of said sequence"

Plaintiff's Proposed Construction	Defendant's Proposed Construction
Function: "for receiving a sequence of lower-resolution pictures in the form of motion-compensated predictively encoded pictures and motion vectors representing motion between successive pictures of said sequence" Structure: "storage medium 3/transmission channel, and equivalents thereof"[4] Alternative Structure: "motion-compensated prediction decoder 4, and equivalents thereof"	Function: "receiving a sequence of lower-resolution pictures based on motion compensated predictively encoded pictures and motion vectors representing movement between the pixels of each individual picture and the next individual picture in the sequence"[5] Structure: "the image sensor 1, motion compensated prediction encoder 2 comprising a subtractor 21, an adder 22, a frame memory 23, a motion estimator 24, and a motion compensator 25 that performs the algorithm described at col. 3, ll. 28–39 and Figure 2, the storage medium 3 (or a transmission channel) and the motion compensated prediction decoder 4, comprising an adder 41, a frame memory 43 [*sic*, 42] and a motion compensator 43, that performs the algorithm described at col. 3, ll. 54–62, and equivalents thereof"[6]

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[4] Plaintiff previously proposed: "an image sensor and a motion-compensated prediction encoder, and equivalents thereof." Dkt. No. 123, Ex. A at 7.

[5] Defendant previously proposed: "receiving a sequence of lower-resolution pictures in the form of motion compensated predictively encoded pictures and motion vectors representing motion between successive pictures of said sequence." Dkt. No. 123, Ex. A at 7.

[6] Defendant previously proposed: "the image sensor 1, motion compensated prediction encoder 2 comprising a subtractor 21, an adder 22, a frame memory 23, a motion estimator 24, and a motion compensator 25 that performs the algorithm described at col. 3, ll. 28–39 and Figure 2, the storage medium 3 and the motion compensated prediction decoder 4, comprising an adder 41, a frame memory 43 and a motion compensator 43, that performs the algorithm described at col. 3, ll. 54–62, and elements 3 and 4 (i.e., the storage medium 3 and the decoder 4)." Dkt. No. 123, Ex. A at 7.

Dkt. No. 123, Ex. A at 7; Dkt. No. 142 at 19–20; *see* Dkt. No. 153, App'x A at 9–11. The parties

submit that this term appears in Claim 10 of the '154 Patent. *Id.* at 9–10.

Shortly before the start of the January 9, 2020 hearing, the Court provided the parties with

the following preliminary construction: "35 U.S.C. § 112, ¶ 6 applies. / Function: 'receiving a

sequence of lower-resolution pictures in the form of motion-compensated predictively encoded

pictures and motion vectors representing motion of pixels from positions in one picture to positions

in the next picture in the sequence' / Structure: 'storage medium 3 (or a transmission channel) and

motion compensated prediction decoder 4 (which includes an adder 41, a frame memory 42, and

a motion compensator 43); and equivalents thereof.'"

(1) The Parties' Positions

Plaintiff argues that "Google's identification of a structure corresponding to the claimed

function is overbroad, and is not supported by the specification." Dkt. No. 142 at 20.

Defendant responds that "[t]he specification makes clear that the motion vectors represent

movement between the blocks of pixels of each individual picture and the next picture in the

sequence, not motion between pictures as a whole." Dkt. No. 150 at 9. Defendant also argues that

"Uniloc's proposed structure rests on a misinterpretation of the patent: 'difference

pictures,' such as 'D_i,' are not the pictures relevant to the claimed function. Instead, the claimed

'lower-resolution' 'motion-compensated predictively encoded pictures' are pictures 'C_i' in the

specification." *Id.* (citations omitted).

Plaintiff replies that "Google's attempts to re-write the claimed function must be rejected,"

and "because Google's function is wrong, its identification of the corresponding structure is also

wrong." Dkt. No. 152 at 3. As to corresponding structure, Plaintiff argues that "predictively

encoded pictures D_i and motion vectors m are both received by storage medium 3/transmission channel (or alternatively motion compensated prediction decoder 4)."

At the January 9, 2020 hearing, the parties presented no oral argument as to this term.

(2) Analysis

For the same reasons discussed above as to the term "generating motion vectors representing motion between successive pictures of said sequence," the Court finds that the claimed function is "receiving a sequence of lower-resolution pictures in the form of motion-compensated predictively encoded pictures and motion vectors representing motion of pixels from positions in one picture to positions in the next picture in the sequence."

The specification discloses:

> Using the calculated motion vector, the *motion compensator 25 generates a prediction picture C_i* which is subtracted from the picture B_i to be encoded so as to form a difference output picture D_i. The prediction image C_i and the encoded difference D_i are added by adder 22 and stored in the frame memory 23.

> Picture C_2 in FIG. 3 is the motion-compensated prediction picture for encoding the picture B_2. As in the prior art, the relevant motion vector m_{12} is assumed to have the value (1,1/2). Picture B_2 is thus encoded in the form of a difference picture which is shown as D_2 in FIG. 3.

> Similarly, picture C_3 is the motion-compensated prediction picture for encoding the picture B_3. Note that the motion vector m_{23} is representative of the amount of motion between pictures B_2 and B_3. This is in contrast to the prior art in which all motion vectors are calculated with respect to the same reference picture B_1. In the present example, motion vector m_{23} has the value (1/2,0). Picture B_3 is now encoded in the form of difference picture D_3.

'154 Patent at 3:34–53 (emphasis added).

Defendant argues that the "the motion compensator 25" is part of the corresponding structure, but the limitation here at issue is recited in the context of "decoding" and "creating the high-resolution picture from said decoded pictures" in Claim 10 of the '154 Patent.

The corresponding structure therefore includes "storage medium 3" (or a "transmission channel") and "motion-compensated prediction decoder 4":

> With reference to FIG. 2 again, the encoded pictures D_i along with the motion vectors m are *stored on a storage medium 3* or transmitted through a transmission channel. Subsequently, the original sequence of low-resolution pictures is decoded by the motion-compensated prediction decoder 4. Again, the most relevant elements of this (MPEG) decoder are shown, i.e. an adder 41, a frame memory 42 and a motion-compensator 43 which *receives the motion vectors* m as produced by the encoder."

Id. at 3:54–62 (emphasis added).

The specification thus links the claimed function to not only the motion-compensated prediction decoder 4 but also, in particular, the motion-compensator 43. Moreover, because the adder 41 and the frame memory 42 are disclosed as being "most relevant elements" and being in intimate connection with the motion-compensator 43 as part of the motion-compensated prediction decoder 4 (*id.*), the Court's construction should refer to all four of these structures. *See Default Proof Credit Card Sys., Inc. v. Home Depot U.S.A., Inc. (d/b/a The Home Depot)*, 412 F.3d 1291, 1298 (Fed. Cir. 2005) ("While corresponding structure need not include all things necessary to enable the claimed invention to work, it must include all structure that actually performs the recited function.").

The Court therefore hereby finds that **"means for receiving a sequence of lower-resolution pictures in the form of motion-compensated predictively encoded pictures and motion vectors representing motion between successive pictures of said sequence"** is a means-plus-function term, the claimed function is **"receiving a sequence of lower-resolution pictures in the form of motion-compensated predictively encoded pictures and motion vectors representing motion of pixels from positions in one picture to positions in the next picture in the sequence,"** and the corresponding structure is **"storage medium 3 (or a transmission**

channel) and motion compensated prediction decoder 4 (which includes an adder 41, a frame memory 42, and a motion compensator 43); and equivalents thereof."

T. "means for estimating motion in said sequence of lower-resolution pictures with sub-pixel accuracy"

Plaintiff's Proposed Construction	Defendant's Proposed Construction

Function:
    "estimating motion in said sequence of lower-resolution pictures with sub-pixel accuracy"
 	
Structure:
    "a motion-compensated prediction encoder, and equivalents thereof"
	Function:
	    "estimating motion in said sequence of lower-resolution pictures with sub-pixel accuracy"
	
	Structure:
	    "motion estimator 24 which operates as described at col. 3, ll.30–34 and Figure 2, and equivalents thereof"[7]

Dkt. No. 123, Ex. A at 8; Dkt. No. 142 at 20; Dkt. No. 150 at 11; Dkt. No. 153, App'x A at 6–7. The parties submit that this term appears in Claim 5 of the '154 Patent. *Id.*

Shortly before the start of the January 9, 2020 hearing, the Court provided the parties with the following preliminary construction: "35 U.S.C. § 112, ¶ 6 applies. / Function (agreed): 'estimating motion in said sequence of lower-resolution pictures with sub-pixel accuracy' / Structure: 'motion estimator 24; and equivalents thereof.'

(1) The Parties' Positions

Plaintiff argues that "Google . . . improperly incorporates additional functions, namely the 'algorithm described at col. 3, ll. 28–39,' into the alleged structure." Dkt. No. 142 at 20.

Defendant responds that "motion estimator 24 is an essential structure because the 'amount of motion' it calculates, which is referred to as a 'motion vector,' is necessary to provide an

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[7] Defendant previously proposed: "the motion estimator 24 that performs the algorithm described at col. 3, ll. 28–39 and Figure 2." Dkt. No. 123, Ex. A at 8.

antecedent basis for the claim language 'said motion vectors' that appears later in Claim 5." Dkt. No. 150 at 11. Defendant also argues that "Uniloc proposes as structure a 'motion-compensated prediction encoder,' of which motion estimator 24 is one of several components." *Id.* (footnote omitted).

Plaintiff replies: "The '154 patent discloses special purpose electronic elements as making up the disclosed and claimed system. It is improper to incorporate algorithms for such devices." Dkt. No. 152 at 4.

At the January 9, 2020 hearing, the parties presented no oral argument as to this term.

(2) Analysis

The parties agree that the claimed function is "estimating motion in said sequence of lower-resolution pictures with sub-pixel accuracy." The specification discloses:

> The further pictures B_2 and B_3 are predictively encoded. In MPEG coding, they are usually referred to as P-pictures. To encode these pictures, the *motion estimator 24* calculates the amount of motion between the current picture B_i and the stored previously encoded picture B_{i-1}. Usually, said motion estimation is carried out on the basis of blocks of 16*16 pixels.

'154 Patent at 3:28–34 (emphasis added); *see id.* at 3:13–15.

The specification thus specifically links the claimed "estimating" function to the motion estimator 24 rather than to the "motion-compensated prediction encoder 2" that includes the motion estimator 24. *See Northrop Grumman Corp. v. Intel Corp.*, 325 F.3d 1346, 1352 (Fed. Cir. 2003) ("Features that do not perform the recited function do not constitute corresponding structure and thus do not serve as claim limitations."). Finally, although Defendant urges that the corresponding structure should refer to the "algorithm" disclosed at 3:30–34 of the '154 Patent, this need not be included in the Court's construction because "motion estimator 24" refers to the specific structure as it is disclosed in the specification.

The Court therefore hereby finds that **"means for estimating motion in said sequence of lower-resolution pictures with sub-pixel accuracy"** is a means-plus-function term, the claimed function is **"estimating motion in said sequence of lower-resolution pictures with sub-pixel accuracy,"** and the corresponding structure is **"motion estimator 24; and equivalents thereof."**

U. "means (5) for creating the high-resolution still picture from said sequence of lower-resolution pictures and said motion vectors"

Plaintiff's Proposed Construction	Defendant's Proposed Construction

Function:
    "creating the high-resolution still picture from said sequence of lower-resolution pictures and said motion vector"
 	
Structure:
    "a processing circuit, or equivalents thereof"[8]
	Function:
	    "creating the still picture having a higher number of pixels from the sequence of two or more pictures that each has fewer pixels and said motion vectors"[9]
	
	Structure:
	    "a processing circuit 5 comprising an up-sampler 51, a multiplier 52, an adder 53, a frame memory 54 and a motion compensator 55 that performs the algorithm described at col. 4, ll. 1–38 and Figure 4, and equivalents thereof"[10]

Dkt. No. 123, Ex. A at 8; Dkt. No. 142 at 21; Dkt. No. 153, App'x A at 23–24; *see* Dkt. No. 150 at 12. The parties submit that this term appears in Claim 5 of the '154 Patent. Dkt. No. 153, App'x A at 23.

Shortly before the start of the January 9, 2020 hearing, the Court provided the parties with the following preliminary construction: "35 U.S.C. § 112, ¶ 6 applies. / Function: 'creating the

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[8] Plaintiff previously proposed: "a motion-compensated prediction decoder and a processing circuit, or equivalents thereof." Dkt. No. 123, Ex. A at 8.

[9] Defendant previously proposed: "creating the high-resolution still picture from said sequence of lower-resolution pictures and said motion vectors." Dkt. No. 123, Ex. A at 8.

[10] Defendant previously asserted that this term is indefinite (Dkt. No. 123, Ex. A at 8), but this assertion does not appear in Defendant's response brief. *See* Dkt. No. 150 at 12–13.

high-resolution still picture from said sequence of lower-resolution pictures and said motion vector' / Structure: 'processing circuit 5; and equivalents thereof.'"

<u>(1) The Parties' Positions</u>

Plaintiff argues that "Google again over-designates corresponding structure" and "Google also again improperly incorporates additional functions." Dkt. No. 142 at 21.

Defendant responds that "[t]he correct corresponding structure . . . is not *any* generic processing circuit, as Uniloc contends, but the specific processing circuit disclosed in the patent." Dkt. No. 150 at 12. Defendant further argues that "this 'processing' circuit structure operates in accordance with the description identified in Google's proposal, which is properly part of the corresponding structure." *Id.* at 13 (footnote omitted).

Plaintiff replies: "The '154 patent specification makes abundantly clear that 'the high-resolution still picture is recursively created by the processing circuit 5." Ex. 2 [('154 Patent)], 3:64–65. . . . The '154 patent explains that the algorithm described in col. 4, ll. 1–38 is illustrative only, and subject to refinement." Dkt. No. 152 at 4–5.

At the January 9, 2020 hearing, Defendant urged that all of the structures identified in Defendant's proposed construction are necessary to perform the claimed function. Defendant also argued that for a computer-implemented structure, an algorithm is necessary. Plaintiff replied that "processing circuit 5" in the Court's preliminary construction includes all of the subcomponents thereof that are set forth in the specification.

<u>(2) Analysis</u>

The parties agree that the claimed function is "creating the high-resolution still picture from said sequence of lower-resolution pictures and said motion vectors." Defendant's proposal as to

the claimed function merely incorporates the parties' dispute as to "resolution," which is addressed

separately above.

As to the proper corresponding structure, the specification discloses:

> After reconstructing the original low-resolution pictures, *the high-resolution still picture is recursively created by the processing circuit 5.* As shown in FIG. 2, this processing circuit 5 comprises an up-sampler 51, a multiplier 52, an adder 53, a frame memory 54 and a motion compensator 55.

'154 Patent at 3:63–67 (emphasis added).

Although Defendant urges that the corresponding structure should refer to the "algorithm"

disclosed at 4:1–38 of the '154 Patent, this need not be included in the Court's construction because

referring to "processing circuit 5" refers to the processing circuit structure as it is disclosed in the

specification. The authorities cited by Defendant do not compel otherwise. *See, e.g., Bennett*

Marine, Inc. v. Lenco Marine, Inc., 549 F. App'x 947, 954 (Fed. Cir. 2013) (rejecting interpretation

of corresponding structure that would encompass "any circuit fulfilling the required function");

Blackboard, Inc. v. Desire2Learn, Inc., 574 F.3d 1371, 1383 (Fed. Cir. 2009) (similar); *Mettler-*

Toledo, Inc. v. B-Tek Scales, LLC, 671 F.3d 1291, 1295–96 (Fed. Cir. 2012); *Sony Corp. v. Iancu*,

924 F.3d 1235, 1240 (Fed. Cir. 2019) (finding that "the reproducing means is necessarily construed

as computer-implemented based on the specification" and, as a result, finding that "the

corresponding structure must include an algorithm").

The Court therefore hereby finds that **"means (5) for creating the high-resolution still**

picture from said sequence of lower-resolution pictures and said motion vectors" is a means-

plus-function term, the claimed function is **"creating the high-resolution still picture from said**

sequence of lower-resolution pictures and said motion vector," and the corresponding structure

is **"processing circuit 5; and equivalents thereof."**

V. "means (5) for creating the high-resolution picture from said decoded pictures and the received motion vectors"

Plaintiff's Proposed Construction	Defendant's Proposed Construction

Function:
    "creating the high-resolution picture from said decoded pictures and the received motion vectors"
 	
Structure:
    "a processing circuit, or equivalents thereof"
	Function:
	    "creating the picture having a higher number of pixels from the sequence of two or more pictures that each has fewer pixels, and the received motion vectors"[11]
	
	Structure:
	    "a processing circuit 5 comprising an up-sampler 51, a multiplier 52, an adder 53, a frame memory 54 and a motion compensator 55 that performs the algorithm described at col. 4, ll. 1–38 and Figure 4, and equivalents thereof"[12]

Dkt. No. 123, Ex. A at 9; Dkt. No. 142 at 22; Dkt. No. 153, App'x A at 24–25. The parties submit that this term appears in Claim 10 of the '154 Patent. *Id.* at 24.

Shortly before the start of the January 9, 2020 hearing, the Court provided the parties with the following preliminary construction: "35 U.S.C. § 112, ¶ 6 applies. / Function: 'creating the high-resolution picture from said decoded pictures and the received motion vectors' / Structure: 'processing circuit 5; and equivalents thereof.'"

(1) The Parties' Positions

Plaintiff argues that "Google unnecessarily over-designates corresponding structure, including select components of processing circuit 5 . . . ." Dkt. No. 142 at 22.

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[11] Defendant previously proposed: "creating the high-resolution picture from said decoded pictures and the received motion vectors." Dkt. No. 123, Ex. A at 9.

[12] Defendant previously asserted that this term is indefinite (Dkt. No. 123, Ex. A at 9), but this assertion does not appear in Defendant's response brief. *See* Dkt. No. 150 at 12–13.

Defendant's response and Plaintiff's reply address this term together with the term "means (5) for creating the high-resolution still picture from said sequence of lower-resolution pictures and said motion vectors," addressed above. *See* Dkt. No. 150 at 12–13; *see also* Dkt. No. 152 at 4–5. The parties likewise argued these terms together at the January 9, 2020 hearing.

(2) Analysis

For the same reasons discussed as to the term "means (5) for creating the high-resolution still picture from said sequence of lower-resolution pictures and said motion vectors," above, the Court hereby finds that **"means (5) for creating the high-resolution picture from said decoded pictures and the received motion vectors"** is a means-plus-function term, the claimed function is **"creating the high-resolution picture from said decoded pictures and the received motion vectors,"** and the corresponding structure is **"processing circuit 5; and equivalents thereof."**

W. "means (53,54) for recursively adding, in the high-resolution domain, a current decoded picture to a previously created picture"

Plaintiff's Proposed Construction	Defendant's Proposed Construction

Function:
   "recursively adding, in the high-resolution domain, a current decoded picture to a previously created picture"
 	
Structure:
   "a processing circuit with an adder, or equivalents thereof"[13]
	Function:
	   "recursively adding, in the high-resolution domain, a current decoded picture to a previously created picture"
	
	Structure:
	   "a processing circuit 5 comprising an up-sampler 51, a multiplier 52, an adder 53, a frame memory 54 and a motion compensator 55 that performs the algorithm described at col. 4, ll. 1–38 and Figure 4, and equivalents thereof"

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[13] Plaintiff previously proposed: "a processing circuit with an adder and a frame memory, or equivalents thereof." Dkt. No. 123, Ex. A at 9.

Dkt. No. 123, Ex. A at 9; Dkt. No. 142 at 22–23; *see* Dkt. No. 150 at 13; *see also* Dkt. No. 153, App'x A at 21–22. The parties submit that this term appears in Claims 9 and 10 of the '154 Patent. *Id.* at 21.

Shortly before the start of the January 9, 2020 hearing, the Court provided the parties with the following preliminary construction: "35 U.S.C. § 112, ¶ 6 applies. / Function: 'recursively adding, in the high-resolution domain, the pixel values of a current decoded picture to the pixel values of a previously created picture' / Structure: 'processing circuit 5, adder 53, and frame memory 54; and equivalents thereof.'"

<u>(1) The Parties' Positions</u>

Plaintiff argues that "Google unnecessarily over-designates corresponding structure, including select components of processing circuit 5 (up-sampler 51, multiplier 52, and motion compensator 55) having no correlation to the claimed function." Dkt. No. 142 at 23.

As to the claimed function, Defendant responds as to this term together with the term "recursively adding, in the high-resolution domain, a current decoded picture to a previously created picture, said previously created picture being subjected to motion-compensation in accordance with the motion vector which is associated with the current decoded picture" (Claim 4), addressed above. *See* Dkt. No. 150 at 13–14.

As to the corresponding structure, Defendant argues that "Uniloc's construction improperly abstracts the structure from the specific processing circuit 5 and adder 53 disclosed in the specification." *Id.* at 14.

Plaintiff replies that "[t]he '154 patent specification discloses that a 'next high-resolution picture E_2 and a motion-compensated previous picture F_2 are added by adder 53.' Ex. 2 [('154 Patent)], 4:13–15." Dkt. No. 152 at 5.

At the January 9, 2020 hearing, Defendant urged that all of the structures proposed by Defendant are necessary to perform the claimed function.

(2) Analysis

For the same reasons discussed above as to the term "recursively adding, in the high-resolution domain, a current decoded picture to a previously created picture, said previously created picture being subjected to motion-compensation in accordance with the motion vector which is associated with the current decoded picture" in Claim 4 of the '154 Patent, the Court finds that the claimed function is "recursively adding, in the high-resolution domain, the pixel values of a current decoded picture to the pixel values of a previously created picture."

As to the proper corresponding structure, the parties agree that the structure includes a processing circuit, but the parties dispute whether the structure also includes an adder and a frame memory.

Claim 10 of the '154 Patent, for example, recites (emphasis added):

10. An arrangement for creating a high-resolution still picture, comprising:
> means for receiving a sequence of lower-resolution pictures in the form of motion-compensated predictively encoded pictures and motion vectors representing motion between successive pictures of said sequence;
> a decoder (4) for decoding said encoded pictures; and
> means (5) for creating the high-resolution picture from said decoded pictures and the received motion vectors;
> wherein the creating means include *means (53,54) for recursively adding, in the high-resolution domain, a current decoded picture to a previously created picture*, said previously created picture being subjected to motion compensation (55) in accordance with the motion vector which is associated with the current decoded picture.

The specification discloses:

> In a first iteration step, the processing circuit 5 outputs the first high-resolution picture G1 and feeds it into the *frame memory 54*. Because the first picture is an I-picture, the output picture G1 is the same as input picture E1.

In a second iteration step, the next high-resolution picture E2 and a motion-compensated previous picture F2 are added by *adder 53*.

'154 Patent at 4:9–15 (emphasis added); *see id.* at 4:25–27.

The specification thus links the "adder 53" and "frame memory 54" to the claimed function of recursively adding. Defendant argues that "[r]emoving, for example, the up-sampler or multiplier would render the remaining structures inoperable to perform the claimed function." Dkt. No. 150 at 15. Yet, "corresponding structure need not include all things necessary to enable the claimed invention to work." *Default Proof*, 412 F.3d at 1298. Instead, "structure disclosed in the specification is 'corresponding' structure only if the specification or prosecution history clearly links or associates that structure to the function recited in the claim." *Med. Instrumentation*, 344 F.3d at 1219 (citation and internal quotation marks omitted). Also of note, the numerals "(53,54)" that appear in the disputed term align with the reference numerals associated with the frame memory and adder in the specification, "adder 53" and "frame memory 54."

The Court therefore hereby finds that **"means (53,54) for recursively adding, in the high-resolution domain, a current decoded picture to a previously created picture"** is a means-plus-function term, the claimed function is **"recursively adding, in the high-resolution domain, the pixel values of a current decoded picture to the pixel values of a previously created picture,"** and the corresponding structure is **"adder 53 and frame memory 54; and equivalents thereof."**

V. CONSTRUCTION OF DISPUTED TERMS IN U.S. PATENT NO. 8,949,954

The '954 Patent, titled "Customer Notification Program Alerting Customer-Specified Network Address of Unauthorized Access Attempts to Customer Account," issued on February 3, 2015, and bears an earliest priority date of December 8, 2011. Plaintiff submits that "[t]he '954 patent is directed to the field of authorizing remote access to secure information, such as

authorizing access of account information over the Internet." Dkt. No. 142 at 2. The Abstract of

the '954 Patent states:

> A network security system includes a server configured to receive an access request
> via a network from a remote computing device, a database storing customer account
> information accessible by the server, and memory accessible by the server and
> storing a customer notification program. When executed by the server, the program
> identifies the remote computing device by a device fingerprint and requesting
> location, determines whether the device fingerprint matches any authorized device
> fingerprints stored in the database and sends, responsive to a mismatch between the
> device fingerprint and the authorized device fingerprints, a notification of the
> request to a customer-specified address. The notification indicates the request, the
> identity of the remote computing device, and the requesting location. The program
> may resolve the request responsive to a reply to the notification from the customer-
> specified address.

AA. "device fingerprint"

Plaintiff's Proposed Construction	Defendant's Proposed Construction
Plain and ordinary meaning[14]	"a bit string (or bit array) that uniquely identifies the device, which includes or is derived from both user-configurable and non-user-configurable data specific to the remote computing device"

No. 2:18-CV-504, Dkt. No. 115, Ex. A at 1; Dkt. No. 142 at 23; Dkt. No. 150 at 19; No. 2:18-CV-

504, Dkt. No. 147, App'x A at 3. The parties submit that this term appears in all asserted claims

of the '954 Patent. *Id.*

Shortly before the start of the January 9, 2020 hearing, the Court provided the parties with

the following preliminary construction: "a bit string (or bit array) that identifies a device, to a

desired degree of uniqueness, and that includes (or is derived from) user-configurable data and

non-user-configurable data specific to the device."

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[14] Plaintiff previously proposed: "data that includes or is derived from user-configurable data and
non-user-configurable data specific to a device." No. 2:18-CV-504, Dkt. No. 115, Ex. A at 1.

Plaintiff argues that "[t]he concept of a 'fingerprint' would be well-known to a juror," and "Google's construction would only serve to sow confusion with the jurors." Dkt. No. 142 at 23 & 24.

Defendant responds that Plaintiff's proposal fails to take into account all of the relevant intrinsic evidence. *See* Dkt. No. 150 at 17–21 (citing, *e.g.*, *Microsoft Corp. v. Multi-Tech Sys., Inc.*, 357 F.3d 1340 (Fed. Cir. 2004)). Defendant argues that "[n]ot only does the ordinary word 'fingerprint' denote uniqueness, the intrinsic record supports such a construction for the term 'device fingerprint.'" *Id.* at 19.

Plaintiff replies: "That the specification discloses that a device fingerprint can be generated 'from user-configurable parameters and non-user configurable parameters' (['954 Patent] at 4:36–37) does not mean that the claimed 'device fingerprint' is so limited." Dkt. No. 152 at 6. Plaintiff also argues that "Google weakly advocates for the inclusion of 'bit string' or 'bit array' in the construction for some unexplained technical 'precision' it perceives and because the specification, not the claims, uses those terms." *Id.*

(2) Analysis

Claim 1 of the '954 Patent, for example, recites (emphasis added):

1. A system for authorizing a request for remote access to customer account information, comprising:
      a server configured to receive the request via a network from a remote computing device; a database storing the customer account information accessible by the server; and
      memory accessible by the server and storing a customer notification program which, when executed by the server, performs steps for
            (a) identifying, responsive to the server receiving the request, the remote computing *device fingerprint* and by a requesting location;

(b) determining whether the *device fingerprint* matches any of a number of *device fingerprints* previously authorized to access the customer account information;

(c) sending, responsive to determining a mismatch between the *device fingerprint* and each of the previously authorized *device fingerprints*, a notification of the request to an address of a separate device specified by the customer, the notification indicating (i) the request, (ii) identity of the remote computing device, and (iii) the requesting location;

(d) resolving the request responsive to a reply to the notification; and

(e) if resolving the request responsive to a reply to the notification results in permitting authorized access to the customer account information by the remote computing device, storing the *device fingerprint* as a previously authorized *device fingerprint* and associating the *device fingerprint* with the customer account information.

The specification discusses using user-configurable data and non-user-configurable data to make a device fingerprint:

In general, the device fingerprint 316 comprises *a bit string or bit array that includes or is derived from user-configurable and non-user-configurable data specific to the remote computing device 104.* Non-user-configurable data includes data such as hardware component model numbers, serial numbers, and version numbers, and hardware component parameters such as processor speed, voltage, current, signaling, and clock specifications. User-configurable data includes data such as registry entries, application usage data, file list information, and MAC address. In an embodiment, the device fingerprint 316 can also include, for example, manufacture name, model name, and/or device type of the remote computing device 104.

'954 Patent at 7:32–44 (emphasis added); *see id.* at 7:24–31 (incorporating-by-reference United States Patent No. 5,490,216 ("the '216 Patent") (attached to Defendant's response brief as Exhibit 3); *see also* '216 Patent at 3:50–60.

The specification also refers to this data string being "unique":

Briefly, a digital fingerprint comprises binary data that *identifies* a remote computing device 104 by deriving a *unique* data string from multiple portions of indicia stored in memory locations within the device, where such indicia can

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include, for example, data representing a manufacture name, a model name, or a device type.

'954 Patent at 4:38–43 (emphasis added); *see id.* at 10:8–20 ("reliably generates a digital fingerprint that uniquely identifies device 104").

Material incorporated by reference likewise refers to uniqueness. *See id.* at 7:24–31 (incorporating "related U.S. Patent Application Publications 2007/0143073, 2007/0126550, 2011/0093920, and 2011/0093701"); *see also* Dkt. No. 150, Ex. 4 at ¶¶ 0018–22 (discussing methods of "uniquely identifying and authenticating [a] device") (emphasis added); *id.*, Ex. 5 at ¶¶ 0009, 0020 (discussing identifiers that can be used to "uniquely identify a protected computing device"); *id.*, Ex. 6 at ¶¶ 0039–42 (discussing that identifiers should be "highly specific, unique, reproducible and stable"); *id.*, Ex. 7 at ¶ 0044 (discussing a fingerprint or identifier that "achieves a high probability of uniquely identifying the client node").

Requiring uniqueness is also consistent with the disclosed objective of distinguishing between, for example, an "authorized laptop" and an "unknown laptop." *See* '954 Patent at 10:19–20. Claim 1 of the '954 Patent, for example, recites identifying a device as part of authorizing a request for access to customer account information.

During prosecution, the patentee likewise referred to a device fingerprint being "unique" and as using user-configurable and non-user-configurable parameters:

> With regard to claim 10, the Office Action states that Sancho (paragraph 0021) teaches where the generated device fingerprint is unlike any other device fingerprint generatable responsive to a request to the server from another remote computing device (i.e., the device fingerprints are unique to that particular device). Office Action, Page 12.

> The Office Action's referenced language from [the] Sancho [reference, United States Patent Application Publication No. 2004/0254890,] is far too vague to support the point contended, that the generated device fingerprint is *unique* with respect to other fingerprints; it teaches nothing regarding fingerprint uniqueness, but merely suggests that reliably unique device identifications can be achieved

("[T]he fingerprint can include such designations as serial number, identifications on components, component configurations and the like"). Sancho, paragraph 0021. In the context of device identification, however, a *reliable and practical digital fingerprint requires the use of both user-configurable and non-user-configurable parameters as taught by applicant's invention.*

Dkt. No. 150, Ex. 2, Response to Office Action at 12–13 (responding to Office Action mailed December 5, 2013) (emphasis modified).

Plaintiff argues that "th[is] comment was made for a specific fingerprint 'unlike any other' and generated from 'user-configurable device parameters,' and there is no inconsistency with applying a broader definition consistent with the ordinary meaning of 'device fingerprint' to the independent claim." Dkt. No. 152 at 12. The patentee's statements, however, are consistent with the other above-discussed evidence and should be given effect in the Court's construction. *See Southwall Techs., Inc. v. Cardinal IG Co.*, 54 F.3d 1570, 1576 (Fed. Cir. 1995) ("Claims may not be construed one way in order to obtain their allowance and in a different way against accused infringers.").

As to Plaintiff's concerns regarding the meaning of "unique," the specification explains that "unique" does not refer to absolute uniqueness but rather a probability of uniqueness:

> Generation of the device fingerprint 316 includes a combination of operations on the data specific to the remote computing device 104, which may include processing using a combination of sampling, concatenating, appending (for example, with a nonce value or a random number), obfuscating, hashing, encryption, and/or randomization algorithms to achieve a desired degree of uniqueness. For example, the *desired degree of uniqueness* may be set to a practical level such as 99.999999% or higher, to achieve a *probability* of less than 1 in 100,000,000 that any two remote computing devices will generate identical fingerprints. In an embodiment, the desired degree of uniqueness may be such that the device fingerprint 316 generated is unlike any other device fingerprint generatable responsive to a request to the server from another remote computing device.

'954 Patent at 7:45–59 (emphasis added). Defendant therefore submits that it "does not argue 'unique' is absolute but rather denotes a high likelihood no other device will have the same value." Dkt. No. 150 at 20 n.15.

At the January 9, 2020 hearing, Defendant argued that including the phrase "desired degree of uniqueness" in the Court's construction might be vague and might even encompass having no uniqueness at all (if none is "desired"). Defendant suggested "practically unique" or "substantially unique." Defendant argued that because the purpose of the patent is security, the required degree of uniqueness is high. Plaintiff had no objection to the Court's preliminary construction (set forth above), which referred to a "desired degree of uniqueness." To address Defendant's concerns regarding the word "desired," the Court adopts Defendant's suggestion of "substantially" unique.

The Court therefore hereby construes **"device fingerprint"** to mean **"a bit string (or bit array) that substantially uniquely identifies a device and that includes (or is derived from) user-configurable data and non-user-configurable data specific to the device."**

BB. "an address of a separate device specified by the customer"

Plaintiff's Proposed Construction	Defendant's Proposed Construction
Plain and ordinary meaning	"an address specified by the customer, where the address is for a separate device"

No. 2:18-CV-504, Dkt. No. 115, Ex. A at 1; Dkt. No. 142 at 25; No. 2:18-CV-504, Dkt. No. 147, App'x A at 3–4. The parties submit that this term appears in all asserted claims of the '954 Patent. *Id.*

Shortly before the start of the January 9, 2020 hearing, the Court provided the parties with the following preliminary construction: "an address of a separate device, the separate device having been specified by the customer."

(1) The Parties' Positions

Plaintiff argues that "[a]s suggested by the claim language and the '954 patent, 'specified by the customer' can broadly refer to the address, the device, or both." Dkt. No. 142 at 25. Plaintiff

also argues that "Google's attempt to tie 'specified by the customer' to only an address is unsupported," and "Google's rewrite of this term renders 'separate device' confusing." *Id.*

Defendant responds that "[t]he phrase 'specified by the customer' modifies the entire phrase 'an address of a separate device,' as the specification explains." Dkt. No. 150 at 21. Defendant urges that "[t]hroughout the specification, a notification is always and only sent to a 'customer-specified address,' as the claim expressly requires." *Id.* at 22 (citations omitted); *see id.* (citing *Poly-Am., L.P. v. GSE Lining Tech., Inc.*, 383 F.3d 1303, 1310 (Fed. Cir. 2004); *Microsoft*, 357 F.3d at 1348). Defendant concludes that "the notification must both be sent: (1) to a device separate from the 'remote computing device' recited earlier in the claim; and (2) to an address for that separate device that the customer specified." *Id.* at 23.

Plaintiff replies that "Google's rewrite suggests a third device, where the claim requires only two, 'a remote computing device' and the device that is the subject of 'an address of a separate device specified by the customer.'" Dkt. No. 152 at 7.

At the January 9, 2020 hearing, Defendant reiterated that the specification contains no disclosure of a device specified by a customer for receiving notifications.

(2) Analysis

Claim 1 of the '954 Patent, for example, recites in relevant part (emphasis added):

1. A system for authorizing a request for remote access to customer account information, comprising:

. . .

memory accessible by the server and storing a customer notification program which, when executed by the server, performs steps for

. . .

(c) sending, responsive to determining a mismatch between the device fingerprint and each of the previously authorized device fingerprints, a notification of the request to *an address of a separate device specified by the customer*, the notification indicating (i) the request,

(ii) identity of the remote computing device, and (iii) the requesting location;

. . .

(e) if resolving the request responsive to a reply to the notification results in permitting authorized access to the customer account information by the remote computing device, storing the device fingerprint as a previously authorized device fingerprint and associating the device fingerprint with the customer account information.

On one hand, the specification refers to sending a notification to a "customer-specified address." '954 Patent at 2:19–23, 4:57–5:9, 5:63–6:1, 6:16–19 & 6:34–40. The specification does not refer to sending to either a "customer-specified device" or to a "customer-specified system."

On the other hand, nothing in the above-reproduced claim language precludes the "separate device" being "specified by the customer" rather than the "address" being "specified by the customer." Further, disclosures in the specification that use "customer-specified" with reference to a "device" or a "system" (*see* '954 Patent at 3:39–43, 5:41–43, 5:48–49 & 8:30–32), rather than necessarily an "address," weigh against the narrow reading of the claim language proposed by Defendant. Defendant notes that the specification distinguishes a "device" from a "system," disclosing that a "customer-specified system can include multiple electronic devices." *See id.* at 9:35–36. Nonetheless, the disclosures regarding a "customer-specified system" still weigh in favor of finding that "specified by the customer" does not necessarily refer to specifying an address.

On balance, the most natural reading of the disputed term is that the phrase "specified by the customer" modifies the closest noun phrase, namely "a separate device." Also, dependent Claim 20 of the '954 Patent reinforces this natural reading because Claim 20 relies on Claim 1 for antecedent basis for "the customer-specified separate device."

The Court accordingly hereby construes **"an address of a separate device specified by the customer"** to mean **"an address of a separate device, the separate device having been specified by the customer."**

CC. "determining whether the device fingerprint matches any of a number of device fingerprints previously authorized to access the customer account information"

Plaintiff's Proposed Construction	Defendant's Proposed Construction
Plain and ordinary meaning	"determining whether the device fingerprint matches any of the device fingerprints on the whitelist of devices previously authorized to access the customer account information"

No. 2:18-CV-504, Dkt. No. 115, Ex. A at 1; Dkt. No. 142 at 25; No. 2:18-CV-504, Dkt. No. 147, App'x A at 4. The parties submit that this term appears in all asserted claims of the '954 Patent. *Id.*

Shortly before the start of the January 9, 2020 hearing, the Court provided the parties with the following preliminary construction: "Plain meaning [(]Expressly reject Defendant's proposal of 'whitelist'[)]."

(1) The Parties' Positions

Plaintiff argues: "Without reason, Google's construction seeks to rewrite the claim's recitation of 'a number of device fingerprints' to 'the device fingerprints on the whitelist of devices.' There is no basis for such a rewriting of the claims. And the recitation is perfectly clear: of the previously-authorized device fingerprints, the system determines, for a number of them, whether the device fingerprint of the requesting device matches any." Dkt. No. 142 at 26.

Defendant responds that "[i]n light of the intrinsic evidence, a person of ordinary skill in the art would understand that this claim limitation refers to the use of a whitelist." Dkt. No. 150 at 23. Defendant also cites prosecution history, arguing that "[t]o overcome the final rejection, the

applicant amended the claim to add the word 'previously' to make it clear that it intended to cover checking against a whitelist." *Id.* at 24. Defendant further submits: "Google's construction requires checking against a whitelist of previously-authorized fingerprints. It does not require every previously authorized fingerprint to be on the list." *Id.*

Plaintiff replies: "There is no indication in Google's construction that only some ('any number of the,' as claimed) of the 'fingerprints previously authorized' are on 'the whitelist,' in a manner consistent with the specification of the '954 patent. Ex. 3 [('954 Patent)], 4:52–56. Accordingly, Google's rewrite should be rejected as inconsistent with the language used in the element." Dkt. No. 152 at 8.

At the January 9, 2020 hearing, Defendant again emphasized the prosecution history in which the patentee referred to a "whitelist." Plaintiff responded that the statements cited by Defendant do not amount to a disclaimer.

(2) Analysis

Defendant proposes replacing "a number of" with "the," thus proposing that the "determining" must involve *all* of the recited device fingerprints. Defendant's proposal cannot be reconciled with the plain meaning of "a number of" as meaning some number of, not necessarily all. This understanding comports with the general convention in patent drafting that "a" means "one or more." This understanding is also consistent with the specification, which explains that the device fingerprints being considered might be limited to "all device fingerprints having accessed the customer account information via the network 110 within a predetermined time period prior to the request." '954 Patent at 4:52–56. Similar language also appears in dependent Claim 11 of the '954 Patent.

Defendant also proposes referring to a "whitelist," which is a word that does not appear in the specification. Defendant emphasizes prosecution history in which the patentee distinguished the "Sancho" reference as lacking any teaching of "checking against a whitelist":

> The above-referenced aspects of Sancho however only check against what is commonly known in the art as a "blacklist". *Applicant's claim 1, however, teaches checking against a "whitelist".* The Office Action language cited above reads that applicant's claim limitation of determining whether a fingerprint matches any authorized fingerprints is manifest in Sancho's teaching of "comparing it to a data base of fingerprints from other computers where fraudulent activity has occurred in the past." The Office Action position is incorrect. Applicant's system does not authenticate a fingerprint as "authorized" only because it's not blacklisted; *in applicant's system, a fingerprint is authorized only if whitelisted except in cases of first impression.* Sancho only checks device fingerprints against a blacklist, therefore Sancho cannot determine a device fingerprint mismatch vis-a-vis a whitelist. *Absent any teaching of whitelisting, this aspect of Sancho fails to read on applicant's claim 1.*

Dkt. No. 150, Ex. 2, Response to Office Action at 4 (responding to Office Action mailed December 5, 2013) (emphasis modified); *see id.*, Ex. 10, Response to Office Action at 5. After another rejection by the patent examiner, the patentee amended the claim to add the word "previously," arguing:

> With regard to claim 1, the Final Office Action of July 9, 2014 (hereinafter "Final Action") states that "applicant's argued feature of 'whitelist' is not presently recited in claim 1." Office Action, Page 3. Applicant respectfully traverses.
>
> Applicant notes that the gerund term "whitelisting" admits of two senses often conflated in common parlance. The first sense of "whitelisting" denotes creation of an "approved" list. The second sense denotes comparing candidate entities against such "approved" list. Applicant asserts that these two denotative senses of the term are sometimes conflated in their connotative sense, in that the term "whitelisting" is often intended to connote both of the aforementioned operations; that is, both creation of the "approved" list and also the subsequent checkings of candidates against the "approved" list. Both companion operations, creation of the approved list and application of the approved list (which is just a filter), are often implied in usage of the term. See e.g. "Whitelist" at http://www.techterms.com/definition/whitelist.
>
> Read in light of applicant's specification, *claim 1 clearly teaches whitelisting* ("[ ] (b) determining whether the device fingerprint matches any of a number of device

fingerprints authorized to access the customer account information") Specification, [0008]. *As currently amended, claim 1 now reifies such teaching by reciting that the implicit list of authorized device fingerprints consists of fingerprints from devices which were previously authorized for access.* The fact that claim 1 explicitly teaches the second sense of "whitelisting" (comparison) here implies that claim 1 also teaches the first sense, creation of the list in order to make comparisons.

Dkt. No. 150, Ex. 11, Response to Final Office Action at 7–8 (responding to Final Office Action mailed July 9, 2014) (emphasis modified); *see id.* at 2 (amending claim).

Yet, in this discussion of whitelisting, the patentee relied on the claim language itself, particularly as to the phrase "previously authorized." This language already appears in the disputed term and is readily understandable on its face. Defendant fails to demonstrate any need or purpose for introducing the technical term "whitelist," which would tend to confuse rather than clarify the scope of the claims. The opinions of Defendant's expert do not compel otherwise. *See* Dkt. No. 150, Ex. 9, Nov. 7, 2019 Grama Decl. at ¶¶ 34–40. No "clear and unmistakable" disclaimer is apparent, nor did the patentee set forth any lexicography. *Omega Eng'g, Inc. v. Raytek Corp.*, 334 F.3d 1314, 1326 (Fed. Cir. 2003); *see id.* at 1324 ("As a basic principle of claim interpretation, prosecution disclaimer promotes the public notice function of the intrinsic evidence and protects the public's reliance on *definitive* statements made during prosecution.") (emphasis added).

The Court therefore hereby expressly rejects Defendant's proposed construction. No further construction is necessary. *See O2 Micro*, 521 F.3d at 1362 ("[D]istrict courts are not (and should not be) required to construe every limitation present in a patent's asserted claims."); *see also Finjan, Inc. v. Secure Computing Corp.*, 626 F.3d 1197, 1207 (Fed. Cir. 2010) ("Unlike *O2 Micro*, where the court failed to resolve the parties' quarrel, the district court rejected Defendants' construction."); *Summit 6, LLC v. Samsung Elecs. Co., Ltd.*, 802 F.3d 1283, 1291 (Fed. Cir. 2015).

The Court accordingly hereby construes **"determining whether the device fingerprint matches any of a number of device fingerprints previously authorized to access the customer account information"** to have its **plain meaning**.

DD. Order of Steps (a)–(e) of Claim 1

Plaintiff's Proposed Construction	Defendant's Proposed Construction
Plain and ordinary meaning of the claim language of elements (a)–(e)	When executed by the server, the steps are performed in order from (a) to (e)

No. 2:18-CV-504, Dkt. No. 115, Ex. A at 1; Dkt. No. 142 at 27; No. 2:18-CV-504, Dkt. No. 147, App'x A at 5. The parties submit that this term appears in all asserted claims of the '954 Patent. *Id.*

Shortly before the start of the January 9, 2020 hearing, the Court provided the parties with the following preliminary construction: "The steps of Claim 1 of the '954 Patent must be performed in the order recited."

(1) The Parties' Positions

Plaintiff argues that "Claim 1 recites only that the steps are performed, not that they are performed in a particular order." Dkt. No. 142 at 27. Plaintiff also argues that "Google cites Figure 7 of '954 patent for support, but the claims should not be limited by the preferred embodiment." *Id.*

Defendant responds that "[t]he logic and grammar of Claim 1 requires that when executed by the 'server,' the 'steps' are performed in order from (a) to (e) as recited in the claim." Dkt. No. 150 at 30.

Plaintiff replies that "the Court need not construe whether the identification of elements (a)–(e) requires a particular order, as the plain language of the elements themselves should control." Dkt. No. 152 at 10.

At the January 9, 2020 hearing, Plaintiff reiterated that no construction is necessary because to whatever extent the claim language requires an order, the claim language speaks for itself. Nonetheless, Plaintiff did not otherwise object to the Court's preliminary construction.

(2) Analysis

"As a general rule, '[u]nless the steps of a method [claim] actually recite an order, the steps are not ordinarily construed to require one.'" *Mformation Techs., Inc. v. Research in Motion Ltd.*, 764 F.3d 1392, 1398 (Fed. Cir. 2014) (quoting *Interactive Gift Express, Inc. v. Compuserve, Inc.*, 256 F.3d 1323, 1342 (Fed. Cir. 2001)); *see Avago Techs. Gen. IP (Singapore) Pte Ltd. v. Asustek Computer, Inc.*, No. 15-CV-04525-EMC, 2016 WL 3029674, at *12 (N.D. Cal. May 27, 2016) (noting case law supporting, and absence of any case law refuting, that "order can be required by a system/apparatus claim").

Courts apply a two-part test to determine whether a particular order of steps is required: "First, we look to the claim language to determine if, as a matter of logic or grammar, they must be performed in the order written," and "[i]f not, we next look to the rest of the specification to determine whether *it* directly or implicitly requires such a narrow construction." *Altiris, Inc. v. Symantec Corp.*, 318 F.3d 1363, 1369–70 (Fed. Cir. 2003) (citation omitted).

Claim 1 of the '954 Patent, for example, recites (emphasis added):

1. A system for authorizing a request for remote access to customer account information, comprising:
     a server configured to receive the request via a network from a remote computing device; a database storing the customer account information accessible by the server; and

memory accessible by the server and storing a customer notification program which, when executed by the server, performs steps for

(a) identifying, responsive to the server receiving the request, the remote computing *device fingerprint* and by a *requesting location*;

(b) *determining whether the device fingerprint matches* any of a number of device fingerprints previously authorized to access the customer account information;

(c) sending, *responsive to determining a mismatch* between the device fingerprint and each of the previously authorized device fingerprints, a *notification* of the request to an address of a separate device specified by the customer, the notification indicating (i) the request, (ii) identity of the remote computing device, and (iii) *the requesting location*;

(d) *resolving* the request *responsive to a reply to the notification*; and

(e) if *resolving* the request responsive to a reply to the notification results in permitting authorized access to the customer account information by the remote computing device, storing the device fingerprint as a previously authorized device fingerprint and associating the device fingerprint with the customer account information.

Defendant argues that steps (a) through (e) must be performed in the order recited:

Step (a) provides the "the device fingerprint" recited in step (b) and "the requesting location" recited in step (c), and therefore, logically, step (a) must precede steps (b) and (c). Step (b) recites "determining whether the device fingerprint matches any of a number of device fingerprints," and this step provides the match/mismatch result that is referred to in step (c), which recites "sending, responsive to determining a mismatch . . . , a notification." Therefore, step (b) must precede step (c). Step (d) must be performed after step (c), because logically a reply to "the notification" as recited in step (d), cannot be made until the notification is sent in step (c). Finally, step (e) must be performed after step (d), because step (e) relies on the result of step (d), by reciting "if resolving the request . . . results in permitting authorized access." Accordingly, steps (a)–(e) should be construed to require that they be performed in order from (a) to (e) when executed by the server.

Dkt. No. 150 at 30.

The Court agrees with Defendant and hereby finds that **the steps of Claim 1 of the '954**

Patent must be performed in the order recited.

EE. "storing, responsive to approving the request, the device fingerprint as a previously authorized device fingerprint"

Plaintiff's Proposed Construction	Defendant's Proposed Construction
Plain and ordinary meaning	Indefinite

No. 2:18-CV-504, Dkt. No. 115, Ex. A at 1–2; Dkt. No. 142 at 27; Dkt. No. 150 at 25; No. 2:18-CV-504, Dkt. No. 147, App'x A at 5–6. The parties submit that this term appears in Claim 4 of the '954 Patent. *Id.*

Shortly before the start of the January 9, 2020 hearing, the Court provided the parties with the following preliminary construction: "Plain meaning [(]Not indefinite[)]."

(1) The Parties' Positions

Plaintiff argues that "Google's expert failed to address th[i]s[] term[], and there is no evidence to explain why a person of ordinary skill in the art could not understand the[] claim[]." Dkt. No. 142 at 28.

Defendant responds that "Claim 4 is indefinite because it impermissibly mixes statutory claim types." Dkt. No. 150 at 25.

Plaintiff replies that "a person of ordinary skill could deduce that 'storing, responsive to approving the request, the device fingerprint as a previously authorized device fingerprint' relates to the program of claim 1, as the program of claim 1 similarly requires 'storing the device fingerprint as a previously authorized device fingerprint.'" Dkt. No. 152 at 8.

At the January 9, 2020 hearing, Defendant urged that the claim is unclear as to whether the "storing" is performed by the customer notification program or by some other aspect of the server recited in Claim 1. Plaintiff responded that a person of ordinary skill in the art would understand that the storing is performed by the customer notification program.

<u>(2) Analysis</u>

"A single patent may include claims directed to one or more of the classes of patentable

subject matter, but no single claim may cover more than one subject matter class." *Microprocessor*

Enhancement Corp. v. Tex. Instruments Inc., 520 F.3d 1367, 1374 (Fed. Cir. 2008) (citing *IPXL*

Holdings, L.L.C. v. Amazon.com, Inc., 430 F.3d 1377, 1384 (Fed. Cir. 2005) (holding indefinite a

claim covering both an apparatus and a method of using that apparatus)).

Claim 4 of the '954 Patent depends from Claim 3, which in turn depends from Claim 1,

and Claims 3 and 4 recite (emphasis added):

> 3. The system of claim 1 wherein the notification further interrogates for an answer
> approving or disapproving the request, and wherein *the resolving step further*
> *comprises approving or disapproving the request* according to the answer.
>
> 4. The system of claim 3 further comprising *storing*, responsive to approving the
> request, the device fingerprint as a previously authorized device fingerprint.

Claim 1 recites "memory accessible by the server and storing a customer notification

program which, when executed by the server, performs steps," and a fair reading is that Claim 4

relates to the "customer notification program." In particular, on its face, Claim 3 refers to sub-

limitation (d) in Claim 1, and the related sub-limitation (e) in Claim 1 is in turn modified by Claim

4.

The Court therefore hereby expressly rejects Defendant's indefiniteness argument. No

further construction is necessary. *See O2 Micro*, 521 F.3d at 1362 ("[D]istrict courts are not (and

should not be) required to construe every limitation present in a patent's asserted claims."); *see*

also Finjan, 626 F.3d at 1207; *Summit 6*, 802 F.3d at 1291.

The Court accordingly hereby construes **"storing, responsive to approving the request,**

the device fingerprint as a previously authorized device fingerprint" to have its **plain**

meaning.

FF. "the number of device fingerprints are stored in a second database accessible by the server"

Plaintiff's Proposed Construction	Defendant's Proposed Construction
Plain and ordinary meaning	Indefinite

No. 2:18-CV-504, Dkt. No. 115, Ex. A at 2; Dkt. No. 142 at 27–28; Dkt. No. 150 at 25; No. 2:18-CV-504, Dkt. No. 147, App'x A at 6. The parties submit that this term appears in Claim 9 of the '954 Patent. *Id.*

Shortly before the start of the January 9, 2020 hearing, the Court provided the parties with the following preliminary construction: "Plain meaning [(]Not indefinite[)]."

(1) The Parties' Positions

Plaintiff argues that "Google's expert failed to address th[i]s[] term[], and there is no evidence to explain why a person of ordinary skill in the art could not understand the[] claim[]." Dkt. No. 142 at 28.

Defendant responds that "the specification lacks any corresponding description, instead describing only storing the device fingerprints themselves." Dkt. No. 150 at 25. Defendant urges that "[a] person of skill in the art would thus not know what Claim 9 means and whether it requires storage of device fingerprints or the number of device fingerprints." *Id.* at 25–26.

Plaintiff replies that "claims 1 and 9 in combination require 'determining whether the device fingerprint matches any of a number of device fingerprints previously authorized to access the customer account information,' per claim 1, wherein 'the number of device fingerprints are stored in a second database accessible by the server,' per claim 9." Dkt. No. 152 at 8–9.

At the January 9, 2020 hearing, the parties presented no oral argument as to this term.

<u>(2) Analysis</u>

Claim 9 of the '954 Patent depends from Claim 1, and Claims 1 and 9 recite (emphasis added):

> 1. A system for authorizing a request for remote access to customer account information, comprising:
>   a server configured to receive the request via a network from a remote computing device; *a database storing the customer account information accessible by the server*; and
>   memory accessible by the server and storing a customer notification program which, when executed by the server, performs steps for
>   (a) identifying, responsive to the server receiving the request, the remote computing device fingerprint and by a requesting location;
>   (b) determining whether the device fingerprint matches any of *a number of device fingerprints* previously authorized to access the customer account information;
>   . . . .
>
> 9. The system of claim 1 wherein *the number of device fingerprints* are stored in a second database accessible by the server.

Thus, whereas Claim 1 recites a database storing the customer account information accessible by the server, Claim 9 requires a second database storing the number of device fingerprints. Defendant fails to show any lack of "reasonable certainty." *Nautilus*, 134 S. Ct. at 2129; *see Sonix Tech. Co., Ltd. v. Publ'ns Intl., Ltd.*, 844 F.3d 1370, 1377 (Fed. Cir. 2017) ("Indefiniteness must be proven by clear and convincing evidence."). To whatever extent Defendant is arguing that Claim 9 is ambiguous as to whether the second database stores actual fingerprints or instead merely a number (that is, a numerical indication of how many fingerprints), no such ambiguity exists because "the number of device fingerprints" recited in Claim 9 refers back to "a number of device fingerprints" recited in Claim 1.

The Court therefore hereby expressly rejects Defendant's indefiniteness argument. No further construction is necessary. *See O2 Micro*, 521 F.3d at 1362 ("[D]istrict courts are not (and

should not be) required to construe every limitation present in a patent's asserted claims."); *see also Finjan*, 626 F.3d at 1207; *Summit 6*, 802 F.3d at 1291.

The Court accordingly hereby construes **"the number of device fingerprints are stored in a second database accessible by the server"** to have its **plain meaning**.

GG. "steps for . . ." Terms

"steps for . . . identifying, responsive to the server receiving the request, the remote computing device fingerprint and by a requesting location"	
Plaintiff's Proposed Construction	**Defendant's Proposed Construction**

Not governed by 35 U.S.C. § 112(f); Plain and ordinary meaning	Function:
	    "identifying, responsive to the server receiving the request, the remote computing device by a device fingerprint and by a requesting location"
	
	Corresponding Acts:
	    Indefinite for failing to disclose corresponding acts under § 112, ¶ 6

"steps for . . . determining whether the device fingerprint matches any of a number of device fingerprints previously authorized to access the customer account information"	
Plaintiff's Proposed Construction	**Defendant's Proposed Construction**
Not governed by 35 U.S.C. § 112(f); Plain and ordinary meaning	Function: "determining whether the device fingerprint matches any of the device fingerprints on the whitelist of devices previously authorized to access the customer account information" Corresponding Acts: "comparing the device fingerprint of the remote computing devices to a whitelist containing the device fingerprints of devices previously authorized to access to [*sic*] the customer account information" and equivalents thereof

"steps for . . . sending, responsive to determining a mismatch between the device fingerprint and each of the previously authorized device fingerprints, a notification of the request to an address of a separate device specified by the customer, the notification indicating (i) the request, (ii) identity of the remote computing device, and (iii) the requesting location"

Plaintiff's Proposed Construction	Defendant's Proposed Construction
Not governed by 35 U.S.C. § 112(f); Plain and ordinary meaning	Function: "sending, responsive to determining a mismatch between the device fingerprint and each of the previously authorized device fingerprints, a notification of the request to an address of a separate device specified by the customer, the notification indicating (i) the request, (ii) identity of the remote computing device, and (iii) the requesting location" Corresponding Acts: "if the device fingerprint of the remote computing device does not match the fingerprints in the whitelist, sending a notification to one or more email addresses and/or phone numbers specified by the customer indicating (i) the request, (ii) identity of the remote computing device, and (iii) the requesting location" and equivalents thereof.

"steps for . . . resolving the request responsive to a reply to the notification"

Plaintiff's Proposed Construction	Defendant's Proposed Construction
Not governed by 35 U.S.C. § 112(f); Plain and ordinary meaning	Function: "resolving the request responsive to a reply to the notification" Corresponding Acts: Indefinite for failing to disclose corresponding acts under § 112, ¶ 6

"steps for . . . if resolving the request responsive to a reply to the notification results in permitting authorized access to the customer account information by the remote computing device, storing the device fingerprint as a previously authorized device fingerprint and associating the device fingerprint with the customer account information"	
Plaintiff's Proposed Construction	**Defendant's Proposed Construction**

Not governed by 35 U.S.C. § 112(f); Plain and ordinary meaning	Function:
	    "if resolving the request responsive to a reply to the notification results in permitting authorized access to the customer account information by the remote computing device, storing the device fingerprint as a previously authorized device fingerprint and associating the device fingerprint with the customer account information"
	
	Corresponding Acts:
	    Indefinite for failing to disclose corresponding acts under § 112, ¶ 6.

No. 2:18-CV-504, Dkt. No. 115, Ex. A at 2–4; Dkt. No. 142 at 28–29; No. 2:18-CV-504, Dkt. No. 147, App'x A at 6–11. The parties submit that these terms appear in all asserted claims of the '954 Patent. *Id.*

Shortly before the start of the January 9, 2020 hearing, the Court provided the parties with the following preliminary construction for all but one of these "steps for" terms: "Plain meaning [(]35 U.S.C. § 112, ¶ 6 does not apply[)]." As to the remaining term ("steps for . . . identifying, responsive to the server receiving the request, the remote computing device fingerprint and by a requesting location"), the Court provided the parties with the following preliminary construction: "steps for . . . identifying, responsive to the server receiving the request, the remote computing device by a device fingerprint and by a requesting location [(]35 U.S.C. § 112, ¶ 6 does not apply[)]."

(1) The Parties' Positions

Plaintiff argues: "Google has cited no case, and counsel is aware of none, where 'performs steps for' in a claim directed to a computer program invokes treatment under 35 U.S.C. § 112(f) as a 'step-plus-function' recitation." Dkt. No. 142 at 30.

Defendant responds that these "steps for" terms invoke a presumption that 35 U.S.C. § 112, ¶ 6 applies. *See* Dkt. No. 150 at 27–29. Defendant asserts that this presumption is not overcome, arguing for example that "'identifying' is not among the specific acts, such as a computation or storing, that a server can perform." *Id.* at 27. "Furthermore," Defendant argues, "although the claim language requires the use of a device fingerprint and requesting location, it does not specify *how* the device fingerprint and requesting location are used." *Id.* Defendant presents similar arguments as to the other "steps for . . ." terms. *See id.* at 27–29. As to corresponding acts, Defendant argues that this claim term is indefinite because "[t]he specification provides no acts that a server can perform to accomplish the function . . . ." *Id.*

Plaintiff replies that "elements (a)–(e) are part of a claimed computer program, not method steps." Dkt. No. 152 at 9.

(2) Analysis

Title 35 U.S.C. § 112, ¶ 6 provides (emphasis added): "An element in a claim for a combination may be expressed as a means or *step for performing a specified function* without the recital of structure, material, or *acts* in support thereof, and such claim shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof." But "even where the drafter employs the 'step for' language, section 112, ¶ 6 is implicated only when *steps plus function without acts* are present." *Masco Corp. v. U.S.*, 303 F.3d 1316, 1326 (Fed. Cir. 2002) (citation and internal quotation marks omitted) (emphasis added).

Claim 1 of the '954 Patent is representative and recites (emphasis added)

1. A system for authorizing a request for remote access to customer account information, comprising:

a server configured to receive the request via a network from a remote computing device; a database storing the customer account information accessible by the server; and

memory accessible by the server and storing a *customer notification program* which, when executed by the server, *performs steps for*

    (a) identifying, responsive to the server receiving the request, the remote computing device fingerprint and by a requesting location;

    (b) determining whether the device fingerprint matches any of a number of device fingerprints previously authorized to access the customer account information;

    (c) sending, responsive to determining a mismatch between the device fingerprint and each of the previously authorized device fingerprints, a notification of the request to an address of a separate device specified by the customer, the notification indicating (i) the request, (ii) identity of the remote computing device, and (iii) the requesting location;

    (d) resolving the request responsive to a reply to the notification; and

    (e) if resolving the request responsive to a reply to the notification results in permitting authorized access to the customer account information by the remote computing device, storing the device fingerprint as a previously authorized device fingerprint and associating the device fingerprint with the customer account information.

Although this claim uses the phrase "steps for," the Federal Circuit in *Masco* stated that

"*in the context of method claims*, the use of the term 'steps for' signals the drafter's intent to invoke

§ 112, paragraph 6." 303 F.3d at 1326 (emphasis added). Claim 1 of the '954 Patent is not a

method claim. Instead, the claim recites steps (a) through (e) as part of a "customer notification

program," so steps (a) through (e) relate to the configuration of the "customer notification

program." Defendant fails to demonstrate that these are method steps as contemplated by 35

U.S.C. § 112, ¶ 6 and as discussed in *Masco*. 303 F.3d at 1326–27; *see Seal-Flex, Inc. v. Athletic

Track & Court Constr., 172 F.3d 836, 849 (Fed. Cir. 1999) (although "the phrase 'step for'

generally introduces functional claim language falling under § 112, ¶ 6," "[t]he word 'step' . . .

may introduce either an act or a function depending on context within the claim") (emphasis

added). Defendant's reliance on the discussion of certain "mechanism" terms in the *Alacritech*

case, which involved method claims, is similarly unavailing. *See Alacritec Inc. v. Century Link

Commc'ns LLC*, 271 F. Supp. 3d 850, 885–88 (E.D. Tex. 2017).

Alternatively and in addition, each of the steps (a) through (e) recites an act. Defendant

fails to persuasively support its argument that "none of these words are specific acts because they

do not describe *how* the function described is accomplished." Dkt. No. 150 at 27; *see id.* at 27–

29. Defendant cites discussion in a concurring opinion in *Seal-Flex* that whereas a function

"corresponds to what that element ultimately accomplishes in relationship to what the other

elements of the claim and the claim as a whole accomplish," acts "correspond to *how* the function

is accomplished." 172 F.3d at 849–50. Here, the steps labeled (a) through (e) relate to how a

customer notification program carries out a function of notifying a customer. The opinions of

Defendant's expert, such as that "'identifying' is not a specific act that can be performed by a

server," are unpersuasive. Dkt. No. 150, Ex. 9, Nov. 7, 2019 Grama Decl. at ¶ 45; *see id.* at ¶¶

45–49.

The Court therefore hereby construes these disputed terms as set forth in the following

chart:

Term	Construction
"steps for . . . identifying, responsive to the server receiving the request, the remote computing device fingerprint and by a requesting location"	"steps for . . . identifying, responsive to the server receiving the request, the remote computing device by a device fingerprint and by a requesting location"[15] (35 U.S.C. § 112, ¶ 6 does not apply)
"steps for . . . determining whether the device fingerprint matches any of a number of device fingerprints previously authorized to access the customer account information"	Plain meaning (35 U.S.C. § 112, ¶ 6 does not apply)
"steps for . . . sending, responsive to determining a mismatch between the device fingerprint and each of the previously authorized device fingerprints, a notification of the request to an address of a separate device specified by the customer, the notification indicating (i) the request, (ii) identity of the remote computing device, and (iii) the requesting location"	Plain meaning (35 U.S.C. § 112, ¶ 6 does not apply)
"steps for . . . resolving the request responsive to a reply to the notification"	Plain meaning (35 U.S.C. § 112, ¶ 6 does not apply)
"steps for . . . if resolving the request responsive to a reply to the notification results in permitting authorized access to the customer account information by the remote computing device, storing the device fingerprint as a previously authorized device fingerprint and associating the device fingerprint with the customer account information"	Plain meaning (35 U.S.C. § 112, ¶ 6 does not apply)

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[15] The parties agree upon this construction of the claimed function for this term. *See* Dkt. No. 147, App'x A at 1.

VI. CONCLUSION

The Court adopts the constructions set forth in this opinion for the disputed terms of the patents-in-suit. The parties are ordered to not refer to each other's claim construction positions in the presence of the jury. Likewise, in the presence of the jury, the parties are ordered to refrain from mentioning any portion of this opinion, other than the actual definitions adopted by the Court. The Court's reasoning in this order binds the testimony of any witnesses, and any reference to the claim construction proceedings is limited to informing the jury of the definitions adopted by the Court.

SIGNED this 20th day of January, 2020.

ROY S. PAYNE
UNITED STATES MAGISTRATE JUDGE